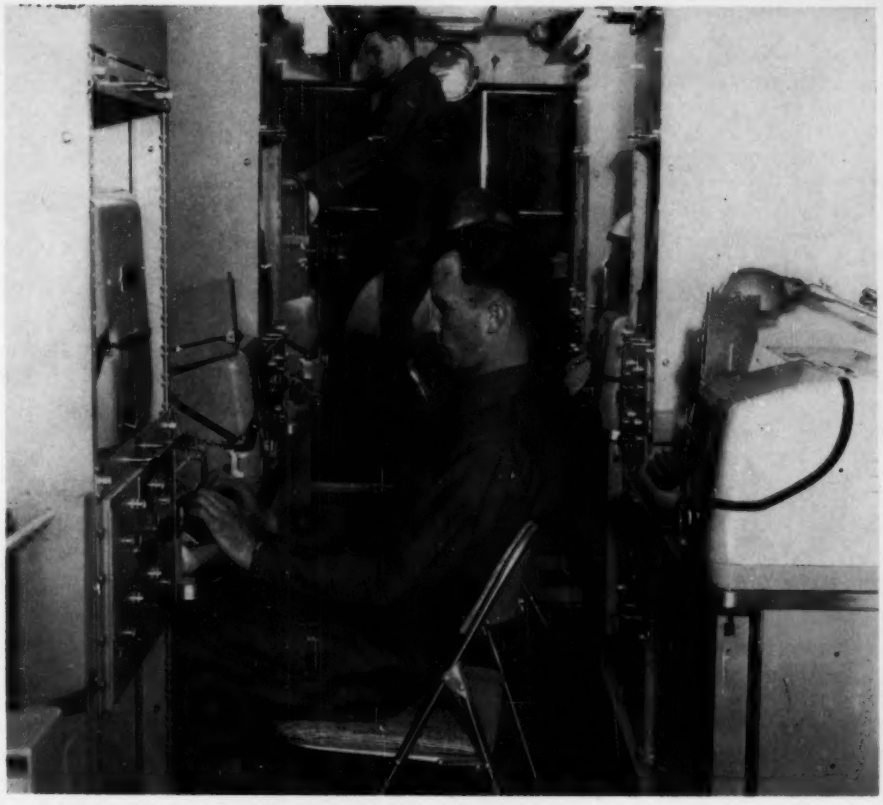
JULY 11, 1959
VOL. 157 — NO. 2

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

SINCE 1901



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Guaranteed Circulation This Issue
13,248 of Which 12,595 Is Paid

ARMY MOBILE UNIT

Army Signal Corps has new Mobile communication system which is geared to quick-reaction demands of small wars. Above is inside view of van housing comcenter-receiver equipment. **See p. 44.**

MANAGEMENT • PLANT • TRAFFIC • COMMERCIAL • LEGAL • ACCOUNTING

FLASHES AND PLUGS

IT'S CRICKET, OL' CHAP! The English people, says an article by the General Post Office Headquarters, London, are a "peculiar" people, who like cricket.

Oddly, for a sport which the people enjoy, but which, the people have been told, is dying, they have not talked much about it—over the telephone, that is.

Perhaps, with a thought to saving this favorite game; but certainly, also to encourage the use of the telephone, which the article reports, the people use "far less than it is used in most highly-civilized countries," the Postmaster General in 1956 hit upon a new telephone service.

The new sales device was instituted "to run the service more economically." The postmaster general tested the use of the telephone by giving the cricket test match scores, when the English were playing the Australians that year. Though the service was available only in London, the people responded with about a million calls during the matches, or more than 200,000 a day.

In '57 when the cricket visitors were the West Indians, the English followers of the game made 3½ million telephone calls.

Last year, the postmaster general made the cricket score service available in 29 towns during the matches against New Zealand, and more than 2½ million calls were made during the days of play. About 171,000 additional calls were made between the matches.

Again, this year, the post office is providing the cricket test match scores by telephone. Scores are available in 30 towns and started with the first cricket test at Trent Bridge.

It seems the English people simply *must* know the cricket match scores; therefore, they not only have been ringing up for information, but if they can induce friendly operators to give details, they may even be filled in on the state of the wicket.

Obviously, cricket is *not* dying . . . the English *still love* their cricket . . . and the English telephone operators really *know* their cricket, too.

•

STARRING ROBERT THE ROBOT. Abe Pressman, an engineer at Radio Corp. of America, recently had a book published called, "Design of Transistorized Circuits for Digital Computers."

Naturally, to Mr. Pressman, his family and friends, this has been a big event; there were even telephone calls and fan letters.

The other day the telephone rang in the Pressman home, and Norman, 10, answered. It was a long distance call, the operator said.

This excited Norman and he ran to the kitchen calling:

"Mommy, mommy, there's a call from California. Maybe they want to make a movie out of Pop's book!"

CHANGE OF ADDRESS

Please notify your local postmaster and the Circulation Dept. of TELEPHONY of change of address. Change cannot be made without the old as well as the new address. Allow three weeks for change of address to become effective.

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY
Since 1901

JULY 11, 1959

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H. D. FARGO JR., *President and Director of Advertising* • A. J. STULTS, *Vice President and Advertising Manager* • R. C. RENO, *Vice President and Editor* • DAN S. FARGO, *Vice President and Managing Editor* • DIANNE P. DRUCKER, *Associate Editor* • HELEN HARDIN, *Associate Editor* • FRANCIS X. WELCH, *Washington Editor* • RAY BLAIN, *Technical Editorial Director* • HAROLD B. McKAY, *Electronics Editor* • MAYME WORKMAN, *Traffic Editor* • VIVIAN RYDEN, *Circulation Manager.*

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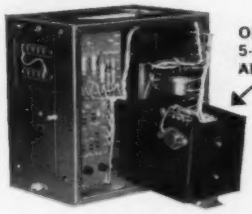
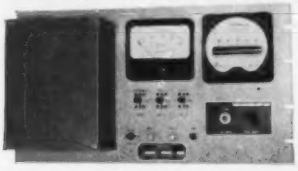
COMMON EQUIPMENT UNIT



Contains, for all frequencies: ample battery filter, remote control relay, audible ringing tone generator with (optional) 5-watt tone amplifier.

AUTOMATIC TRANSFER PANEL



Connects two ringing machines together with either as the main machine, the other as standby. Load is automatically transferred to the standby and alarm is operated on partial or complete failure of the main. Manual transfer possible to check the standby. Either machine supplies load while other is metered for adjustment or tested with simulated ringing failure. Other panels available: portable, manual transfer and supervisory.

TWO MODELS
(Conservative ratings)
Model T: output 25 watts per frequency.
Fits 19″ rack, adapts to 23″ and 30″.
Takes only 17½″ vertical rack space.
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Write for Bulletin 177A

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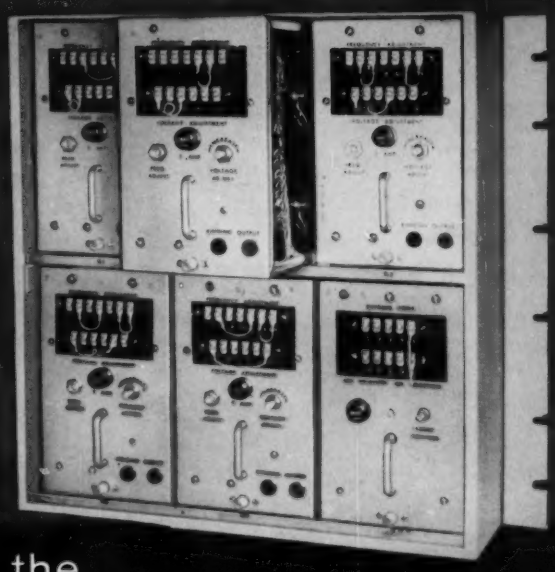

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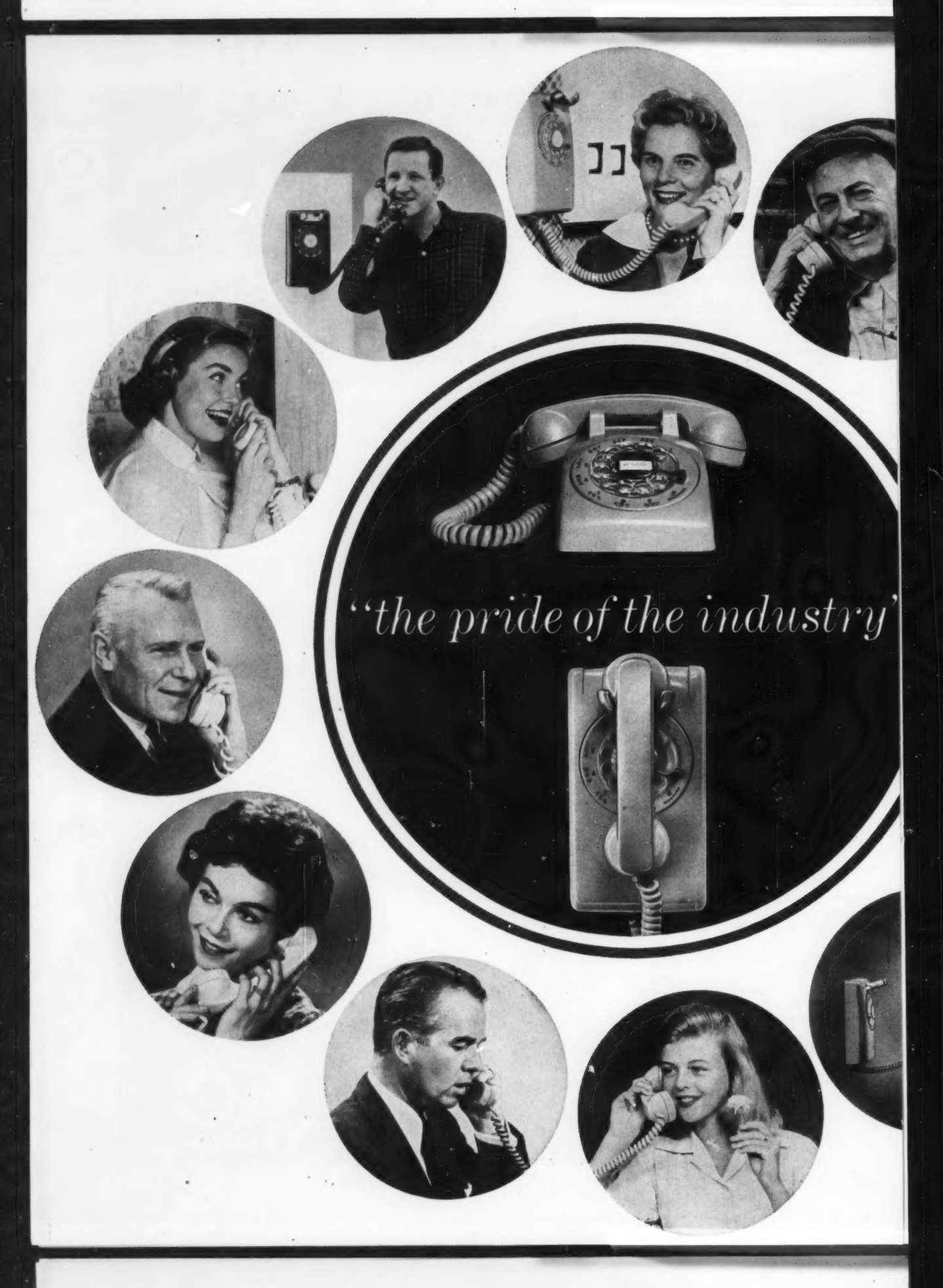
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"PACKAGING" MICROWAVES FOR MOUNTAIN TOPS

"TJ" radio-relay station at Black Mesa, Arizona

In Arizona, the telephone company faced a problem. How could it supply more telephone service between Phoenix and Flagstaff—through 135 miles of difficult mountain territory?

Radio offered the economical answer: a new microwave radio-relay system recently created at Bell Telephone Laboratories. Operating at 11,000 megacycles, it was just right for the distance, and the number of conversations that had to be carried.

But first other problems had to be solved: how to house the complex electronic equipment; how to assemble and test it at hard-to-reach relay stations way up in the mountains; and how to do it economically.

On-the-spot telephone company engineers had some ideas. They worked them out with engineers at the American Telephone and Telegraph Company and at Bell Telephone Laboratories. The result: a packaged unit.

The electronic equipment was assembled in trailer-like containers at convenient locations and thoroughly checked out. The complete units were then trucked up the mountains and lifted into position.

The system, now operating, keeps a watch on itself. When equipment falters, a relay station switches in stand-by equipment, then calls for help over its own beam.

The new Phoenix-Flagstaff link illustrates again how Bell System engineers work together to improve telephone service. Back of their efforts is the constant development of new communications systems at Bell Telephone Laboratories.

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will make money for you...

The Stromberg-Carlson Toll Ticketing System is created to put more profit in your operation; yet is simple and economical in design.

Fully automated, its magnetic tape storage principle permits playback information to feed into typewriter, card-punching machine or punched tape.

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with money-making XY Toll Ticketing.

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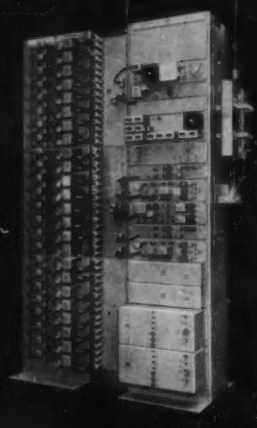

2 kmc
6 kmc
time division
frequency division
now available

By adding 6 KMC equipment to its 2 KMC line, General Electric now offers the first and only complete line of microwave in the industry.

Proved Reliability

General Electric microwave equipment has earned an outstanding reputation for dependability. Southern Colorado Power Company, for example, enjoyed a reliability factor of 99.99 percent in 18,360 hours of operation using General Electric 2 KMC equipment. This same reliability is engineered and built into the new 6 KMC product.

More Flexibility for Systems Designers

Microwave systems designers now have a wider choice than ever before *from one unbiased source.* They not only can choose between 2 and 6 KMC equipment, but also between time and frequency division multiplexing. Thus systems planners can pick the exact product or combination of products to suit their needs, providing from one to 120 voice channels for communication or control.

For complete information on General Electric microwave, contact your G-E communications consultant, listed under "Radio Communication Equipment" in the Yellow Pages. Or write General Electric Company, Communication Products Dept., 3579-11, Mountain View Road, Lynchburg, Va.

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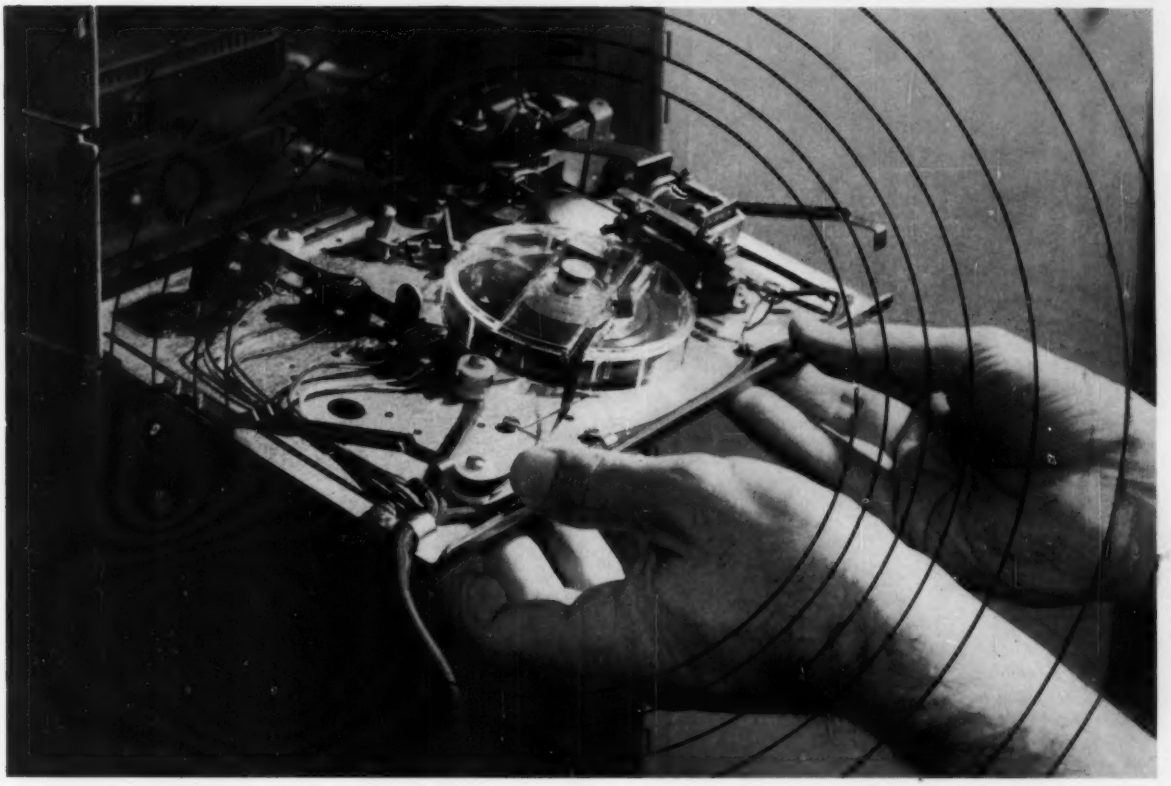
With Stromberg-Carlson Toll Ticketing in your exchange, your subscribers can dial directly into the nationwide system. Magnetic tape recorders store and release information **without personal attention, transport** or **reloading.**

Get the extra revenue of DDD now–with XY Toll Ticketing.

Magnetic tape recorders in XY Toll Ticketing System are easy to jack in-and-out.



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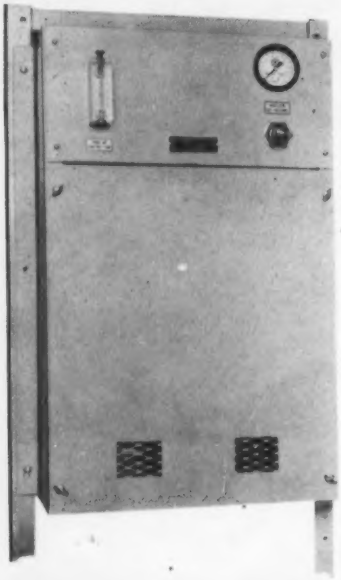
NOW! from S&G MANUFACTURING CORP.

THE MODEL "R" DEHYDRATOR (AUTOMATIC)

for pressurizing aerial and underground telephone cables



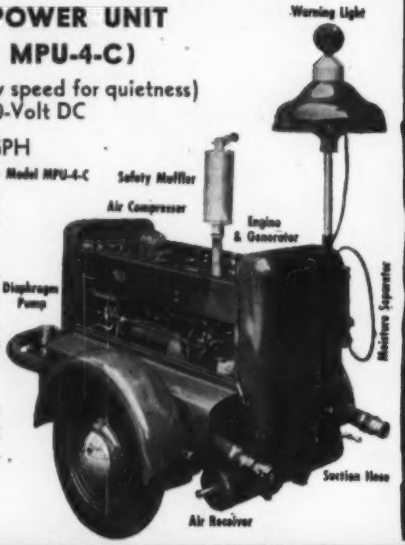
The Model "R" Dehydrator is designed to supply dry air to telephone cables. Among its many outstanding safety features are:

- Hi-Lo pressure switch for alarm
- Humistat for alarm above 4% R.H.
- Power failure relays and separate fustat
- By-Pass Valve & Alarm for excessive R.H.
- Mechanical control valve for stand-by air supply (O.P.N.) in event of power failure
- Additional safety features on air compressor
- Power supply is 115-volt, AC on the Dehydrator and Air Compressor
- Power consumption—2 AMPS

The Model "R" Dehydrator (Automatic) is designed for small installations of 80 miles or less of cable. It is a wall or relay rack-mounted type, approximately 24" high, 28" wide and 8" deep. Operating voltage is 115 volts, 1 phase, 60 cycle, and the output is 700 standard cubic feet per day maximum, with a dewpoint of —40°F. and power consumption of 2 AMPS.

MOBILE POWER UNIT (Model MPU-4-C)

- Generator (slow speed for quietness) 2500 Watt, 110-Volt DC
- Pump—2800 GPH Diaphragm to remove seepage and drain back
- Air Compressor —to put cables under pressure for cutovers or repairs
- Furnished with or without pump and compressor.



MODEL "A" Air Compressor Dehydrator

Exchange unit equipment designed to supply chemically dry air for telephone cables, aerial and underground, this unit can supply as many as 60 cables. It is equipped with volume recording air meter, high and low pressure alarm switches, humidstat and hour meter.

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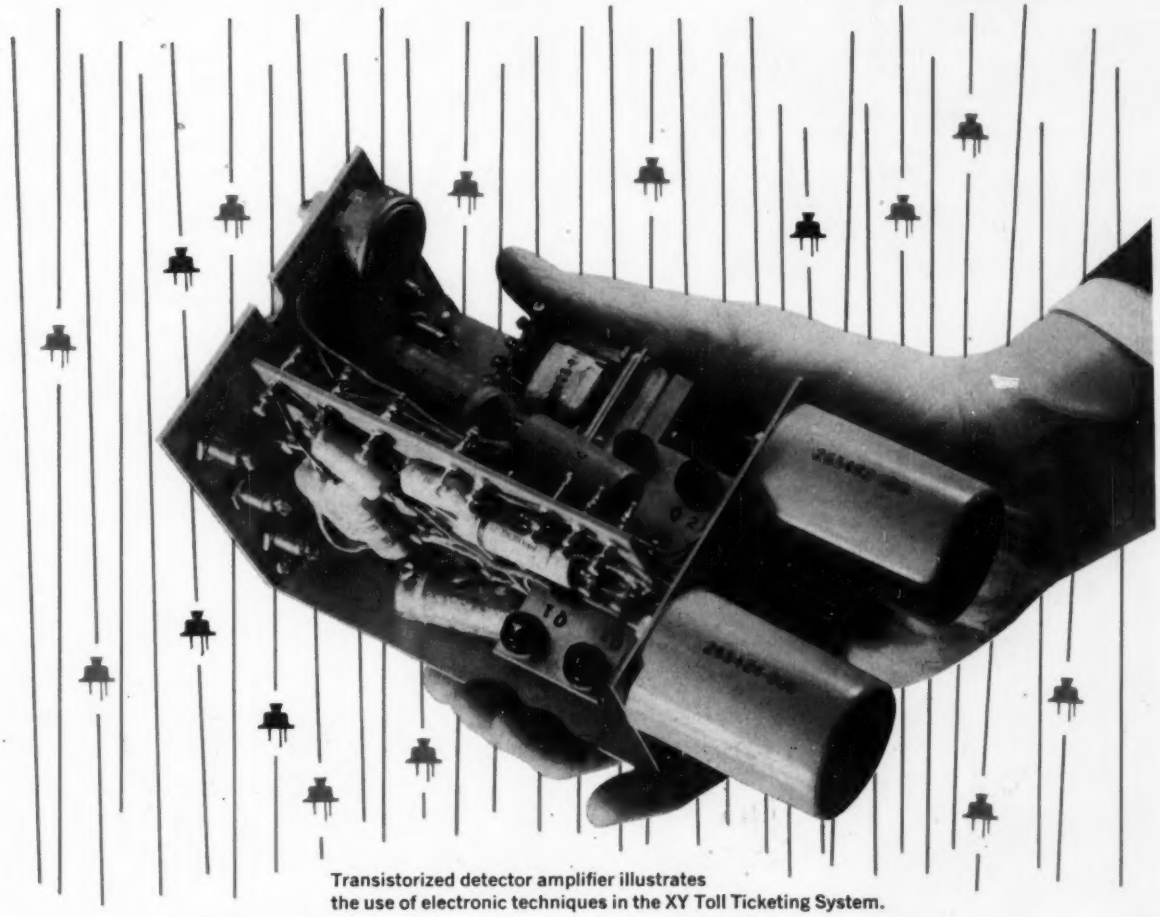
Contact your Stromberg-Carlson representative.



Transistorized detector amplifier illustrates the use of electronic techniques in the XY Toll Ticketing System.

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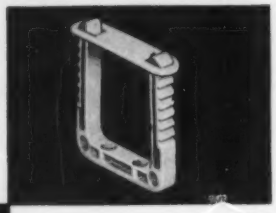

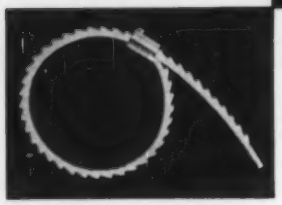

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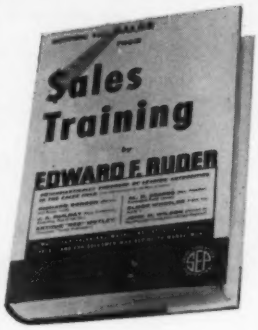
NEW TRAINING BOOK RECOMMENDED BY TELEPHONY

Here is a much-needed book on sales training for use by managers, department heads, superintendents, trainers, schools and libraries.



The newest training techniques are given practical application. Included are indoctrination, refresher and by mail training; memory, reading and speech improvement; and training supplements—sales contests, meetings, manuals, house organs, and new recruiting and hiring methods. This new book is enthusiastically endorsed by the top authorities—Arthur Motley, Pres., *Parade Publications;* Al Seares, V.P., Remington Rand; Elmer Wheeler, Consultant; John Wilson, Retired V.P. Sales, National Cash Register; J. McInay, V.P., Marketing, Ray-O-Vac; Richard Borden, Consultant.

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proven extra revenue producer...

Since installing Stromberg-Carlson Toll Ticketing equipment, the Redmond exchange of Northwest Telephone Company has enjoyed a 28% increase in toll revenue! You, too, can get the extra revenue of DDD now—with XY Toll Ticketing. Ask your Stromberg-Carlson representative.

James M. Wells is President of Northwest Telephone Company.

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ROCHESTER TELEPHONE COMPANY, Inc.
117 W 8TH STREET
Rochester, Indiana

December 1, 1958

Mr. Loren M. Berry
L. M. Berry and Company
Hulman Building
Dayton 2, Ohio

Dear Loren:

You and I have known each other since we were young men, and for the last twenty-five years your organization has published the directory for the Rochester Telephone Company. Due to the friendly relations we have had for a quarter of a century, we feel it is fitting that we should review these years we have worked together.

All too often, when everything goes alright for a long period of time, we are apt to take it all as a matter of course. Looking back, however, we in our office realize how much your service has meant and done for us. When you took over our advertising sales in 1933, we furnished a small directory with little advertising. Since that time we have watched our directory enlarge in size each year. The advertising has grown in greater ratio than our alphabetical listings and our net profit has increased in like proportions. Naturally, all this pleases us very much.

Furthermore, we would like to say something about the type of people you send here to do the job. They have always been of high type, well trained, and cooperative to the last degree. In a number of instances they have helped us restore good relations with some disgruntled subscribers. They have made numerous new friends for our company and we have yet to hear of the first instance where there was any complaint about them and their salesmanship. We also like your policy, both with our company and our advertisers, that "The customer is always right."

It has been a great source of satisfaction to do business with your organization and to have such friendly association throughout the years. We know it will go on that way long in the future.

Yours very truly,

Hugh A. Barnhart

Hugh A. Barnhart
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IN THE NATION'S CAPITAL

BY FRANCIS X. WELCH, WASHINGTON EDITOR

House opposes Senate amendment to terminate all telephone excise taxes on June 30, 1960. . . . Final bill calls for termination of tax on local bills only. Virginia co-op association denies that it opposes State Rights Bill, as inferred by NRECA. Discusses proposal to "pool" REA co-ops "investments and savings" which have grown from 43.7 million dollars in 1953 to 192 million in 1957. New York commission clarifies policy on accelerated depreciation and taxes.

THE HOUSE of Representatives is responsible for the reduction in promised benefits to telephone subscribers in the matter of federal excise taxes. As passed by the Senate, and described in this department last week, both the telephone and telegraph users stood to gain over 700 million dollars through the elimination of the 10 per cent tax on both monthly bills, long distance telephone calls, and telegraph messages as of June 30, 1960.

Then the conference committee of the House and Senate started whittling down all tax relief benefits voted by the Senate. Result: The telephone tax relief was confined to the 10 per cent on local bills, still as of June 30, 1960. The tax on long distance calls and telegrams will go right on.

And that is not all! The Senate's attempt to get rid of the 10 per cent excise tax on interstate passenger fares entirely was watered down and deferred. The conference committee, under strong House pressure, cut the Senate's passenger fare tax relief plan in half (only 5 per cent instead of 10 per cent) and postponed the effective date until June 30, 1960, just as in the case of the tax on local telephone bills.

Just the same, telephone companies can score this excise tax extension law as a victory for the telephone subscriber, even if he does not get a penny's worth of benefit out of it for a whole year. The cost of the local telephone tax repeal adds up to about 430 million dollars (annually), if it goes into effect next July 1. The cost of the passenger tax relief adds up to about 125 million dollars on the same basis.

Will Congress let this repeal provision go into effect? That is a good question, but the time is too far away even to guess. Next July 1 will be right in the middle of a general election campaign year and the temptation will be strong for Congress to do the popular thing. Tax reduction is always a popular thing. So it could well happen.

In any event, telephone companies are at least in a much better position —even if a seriously unbalanced budget does make it necessary to cancel these tax benefits before next July 1. It will now be necessary for Congress to vote affirmatively to extend these taxes in order to keep them from expiring. So, a start has at last been made down the long hard road towards the repeal of the telephone excises. That is more progress than we have seen, on this front, for years and years.

States Rights and Congressional Intent

The House of Representatives has again passed the states' rights bill, sponsored by Representative Smith (D., Va.), and the Senate will probably bottle it up, or kill it again, just as it did at the last session. This is the bill which attempts to prevent the U. S. Supreme Court from construing the so-called "intent of Congress" in such a way as to knock out state laws operating in a variety of fields; labor controls; Communist sedition, and even utility and anti-strike laws.

Public utility anti-strike laws on state statute books have been among those stricken down by the U. S. Supreme Court under the pre-emption doctrine of paramount federal jurisdiction. Most important of these was the Wisconsin utility anti-strike law, invalidated in 1949 on grounds that Congress, in passing the Taft-Hartley Act, had asserted a paramount federal interest in the regulation of labor disputes in essential industries such as public utilities.

Another important state utility anti-strike law, which has been on the Missouri statute books for some years, is now before the U. S. Supreme Court for review. This is the King-Thompson Act, which the highest court has agreed to take up next fall, following an appeal from a Missouri Supreme Court decision upholding this state law.

Should Congress approve the Smith Bill, the validity of these utility anti-strike laws would be reinstated. The main source of agitation for the Smith Bill, however, is the irritation which the state legislatures feel over the invalidation of state laws against sediton. A major argument made against the Smith Bill is that no one is quite sure what the effect of an across-the-board retroactive approach would be. Opponents say it would cause a flood of litigation over past acts of Congress, and might strike down uniform federal regulatory programs in many fields. Supporters, on the other hand, say H. R. 3 is simply a guide for the courts and does no more than codify the present pre-emption rule.

This Smith Bill, as passed by the House, is very brief: two sentences. The first sentence says that courts shall not construe an act of Congress as preempting a field unless the act so states or unless there is such a "direct and positive" conflict between federal and state law on the same subject that they

cannot be "reconciled or consistently stand together." The second sentence says that Congress in passing the Smith (anti-Communist) Act of 1940 did not intend to prevent states from prosecuting sedition against the United States. The U. S. Supreme Court ruled in 1956 that Congress *had* intended to pre-empt this field.

Incidentally, the leader of Virginia's REA cooperative association took issue with the claim that all members of the National Rural Electric Cooperative Association (NRECA) were against the Smith Bill to curb the U. S. Supreme Court. Earl J. Shiflet released a statement saying: "I must disassociate the more than 100,000 Virginia members of the Virginia Association of Electric Cooperatives from such implication." Shiflet is executive secretary of the organization. He said the state association has never discussed the Smith Bill and has never taken action on it.

Shiflet's statement referred to a news report on the debate on the Smith Bill in the House of Representatives. In the debate, Chairman Celler (D., N. Y.) of the House Judiciary Committee, cited a letter from Clyde T. Ellis, general manager of NRECA, saying the association's four million members opposed the bill. Shiflet said he received a telegram from Ellis in which Ellis denied he had said members of the organization opposed the bill.

REA Co-op Pool Idea

Speaking about the REA co-ops brings to mind another recent development in Congress over the question of whether the government should foster artificially cheap interest rates (subsidized by the taxpayers), or let government borrowing rise in a free money market to competitive levels. The administration is for the latter course; and, in a compromise bill approved by Congress, it has won its point to some extent. But, the administration got nowhere with its other specific proposal —to increase the subnormal interest rate of 2 per cent on REA loans.

The soft-money congressmen cannot reasonably contend that people who lend money to the federal government ought to get less interest on their loans than creditors in other fields. So, they take the indirect argument against lifting federal interest rates to market levels by sly digs and hints that a disproportionate volume of interest payments goes to the crafty and oppressive capitalists. The U. S. Treasury has gone to some trouble to refute this.

U. S. Treasury Secretary Anderson appeared before the House Ways and Means Committee the other day with a table showing the distribution of federal interest payments in 1946 and 1958. One of the reasons he may have chosen 1946 as a base is that in that year the Federal Reserve was still captive to the Treasury in a wartime deal to hold government interest rates at artificial lows. Such a period of synthetically soft money is still regarded lovingly by people who abhor the freedom of the open money market. So, the distribution of interest payments in 1946 would probably appeal to these people as just about right.

So, what? The total interest paid in 1946 was 4.7 billion dollars! The tally in the free market of 1958, with more debt and other borrowers competing for funds, has been up to 7.6 billion dollars. But, did this increase of 2.9 billion dollars go to the plutocrats? Not at all. The three biggest jumps are some 800 million dollars more in interest on savings bonds, 700 million dollars more in payments to Federal Reserve banks, and 800 million dollars more in payments to government investment accounts. Savings bonds are held by individuals, and mostly by moderate income individuals. The Federal Reserve pays 90 per cent of its earnings right back into the Treasury. The typical federal government investment accounts are Social Security trust funds which operate exclusively for the benefit of ordinary citizens.

In many cases, the people lamenting the interest burden and demanding a soft money easement are the same ones who have pushed steadily since 1946 for reckless federal spending schemes which helped swell the debt, and so the interest payments. Certainly the 1946-58 figures punctured any notion that market interest rates on federal bonds are of special advantage to the idle rich.

In the special field of REA financing, Raymond Moley, original New Deal braintruster, now writing editorially in *Newsweek*, recently paid special attention to the sharp rise in REA co-op money reserves. Assisted by the 2 per cent interest rate, these cooperative "investments and savings" have grown from 43.7 million dollars in 1953 to 192 million dollars in 1957.

Last winter, at the annual convention of the National Rural Electric Cooperative Association in Washington, D. C., the proposal was made that these funds be "pooled." Moley explained this in the July 6 issue of *Newsweek* as follows:

"Ellis (Clyde T. Ellis, general manager of NRECA) proposed that the investment account be put into his NRECA in trusteeship — an unusual function for a trade association-pressure organization. Then he proposed that this pool be placed with a New York bank for investment opportunities. It is ironical that Ellis has always denounced the 'Wall Street' financings of the private, investor-owned companies."

Recent Quotations of Independent Telephone Stocks

	BID 7/1/59	ASKED 7/1/59	BID 6/1/59	ASKED 6/1/59
Anglo-Canadian Telephone Co.	36½	37½	41¼	42¼
California Interstate Telephone Co.	14¼	14⅝	14¾	15¼
California Pacific Utilities Co.	36	36½	36½	37
California Water & Telephone Co.	24⅝	25	25¾	26¼
Carolina Telephone & Telegraph Co.	162 Bid		162 Bid	
Central Telephone Co.	23½	24	25½	26
Chenango & Unadilla Telephone Corp.	25½	27	25	26
Cincinnati & Suburban Bell Telephone Co.	91	92	93	94
Commonwealth Telephone Co.	19¼	20	19½	20
Florida Telephone Corp. Class A	26¼	27	28½	29
General Telephone Corp. Common	69⅝	L. S.	69	L. S.
Indiana Telephone Corp.	19	21	18	20
Inter-County Telephone & Telegraph Co.	59	61	60	63
Inter-Mountain Telephone Co.	15⅞	16⅜	15¾	16¼
Lincoln Telephone & Telegraph Co.	58½ Bid		58 Bid	
Middle States Telephone Co. of Illinois	22½	23½	22¾	23¾
North Carolina Telephone Co.	1¾	1⅞	2	2¼
Northern Ohio Telephone Co.	40½	42½	42	43
Peoples Telephone Co.	90 Bid		88 Bid	
Rochester Telephone Corp.	25¾	L. S.	24¾	L. S.
Southern Nevada Telephone Co.	21½ Bid		23¼	24¼
Southern New England Telephone Co.	43¾	44¼	44¾	45¼
Southwestern States Telephone Co.	24½	24⅞	24½	24⅞
Telephone Service Co. of Ohio Class A	118	—125	140	—160
Tidewater Telephone Co.	25	26	25	26½
United Utilities, Inc.	30	30½	31⅝	32
West Coast Telephone Co.	23¼	23¾	23	23½
Western Light & Telephone Co., Inc.	40	40¾	42¼	43

(Quotations supplied by Merrill Lynch, Pierce, Fenner & Smith)

This pooling would undoubtedly yield handsome profits, as Moley says:

". . . if the cooperatives choose to relinquish their independence and give over to this sort of vast investment operation, made profitable by borrowing from the government at half or less than half the price which government must pay for its money. . . ."

When Agriculture Secretary Benson recently proposed that the cooperatives unite to form their own bank, under their own mutual control and ownership — similar to the existing farm credit arrangement — it was denounced far and wide as a scheme to scuttle the REA program and hand the co-ops over to Wall Street bondage. Yet, the difference between these two pooling arrangements would seem to be mainly in who has the top control. But, both would depend for maximum profits on the continuation of the 2 per cent interest rate on REA loans. On this front, the administration has taken a licking in Congress, and will probably continue to take a licking for the indefinite future.

The REA interest rate of 2 per cent would not look so bad by comparison if the government cheapened *all* interest it had to pay by artificial coercion. The present prospects are that it is going to look worse as government interest rates continue to climb in the free money market.

Accelerated Depreciation and Taxes

Last month it was noted in this department that the New York Public Service Commission had gotten out a long declaration of policy on the subject of accounting treatment for those public utility companies which do (or do not) use the accelerated depreciation method of determining their federal income tax liability. Ever since that time there has been some speculation that the New York commission might try to penalize public utility companies which do not use this method of computing their taxes, by assuming that they had done so.

Your correspondent was among those who was apprehensive on this score, especially in view of the fact that telephone companies have probably used the accelerated depreciation provision less than any other public utility industry. (The Bell System has not used it at all and the larger Independents have used it very conservatively.) Consequently, any penalty by way of assuming a so-called "tax savings," which was not in fact realized, would be a considerable burden on these telephone companies.

So it gives this writer much satisfaction to refer to a clarifying statement made at the recent convention of the New York State Telephone Association at Schroon Lake, N. Y., held on June 15 to 17, by Commissioner Spencer B. Eddy of the New York commission. He made this special statement at the request of Ham Cunningham, executive secretary of the association, who referred to the uncertainty, if not confusion, which had followed in the wake of the commission's declaration of policy.

In a word, Commissioner Eddy's statement would seem to set at rest any fear that the commission is out to penalize tax-paying utility companies in New York State which refuse to take advantage of the accelerated depreciation provision of the Internal Revenue Act. But, here are the following points made in Commissioner Eddy's statement:

(1) Accelerated depreciation is a device to reduce income taxes.

(2) It is up to management to decide whether or not a company is to adopt accelerated depreciation.

(3) It is better for both the company and its customers if the company uses every possible legal device to reduce expenses such as taxes, as that helps to keep the rates down.

(4) There will be no penalty for companies which continue to use straight line depreciation for tax purposes. The New York commission's policy differs from that of the Maine commission in this respect.

(5) Where companies adopt accelerated depreciation, the benefits will be shared as the commission will allow the company a somewhat higher rate of return than otherwise while authorizing lower rates to the customers.

As will be seen from the above, the New York commission is not disposed to let the owners of a public utility company enjoy the full benefit of "tax savings" or "tax deferrals" (if you prefer) by permitting the so-called procedure of "normalization." This simply means letting the company charge the normal tax payment (which it otherwise would have to pay) to its tax expense account, while pocketing the difference (for that year) as compared with the actual lower tax payment under the accelerated depreciation computation.

A recent decision of the Supreme

(Please turn to page 54)

REA Authorizes 3 Telephone Loans

The Rural Electrification Administration has approved three telephone loans as follows:

Wickes (Ark.) Telephone Co.; $65,000; June 23.

This loan, together with funds provided in the first loan, will enable the borrower to complete its authorized system which will consist of five automatic exchanges. The borrower plans to furnish new and improved service to 979 subscribers.

H. N. Odum is president and W. L. Odum is manager of the Wickes company.

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Poland Telephone Co., Raymond, Me.; $55,000; June 23.

This loan will provide for additional toll facilities and an increase in the proportion of private and semi-private lines, and will complete the authorized system.

REA loans to this borrower now total $651,000 which will enable it to furnish new and improved service to 1,340 subscribers. The completed system will consist of four exchanges, all of which are in operation and furnishing dial service to approximately 1100 subscribers.

Charles W. Ricker is president and manager of the Poland company.

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Hartville (Mo.) Telephone Co.; $38,000; June 23.

This loan will provide service to 97 new subscribers in the Manes community.

REA loans received by the Hartville company now total $284,000 which will enable it to furnish new and improved service to 659 subscribers. The Hartville exchange was cutover to automatic operation on Mar. 30, 1959.

David McMahon is president and Ralph E. Crass is manager of the Hartville company.

Sizing Up Your Force

By LEO A. BIRCH*

A suggested procedure developed for the purpose of determining how to compute operator requirements for the small telephone offices having less than 10 switchboard positions.

I CONSIDER it an opportunity to address a group of people who are one of the most important of all groups in the telephone business—traffic people.

This is not intended at all as flattery, for the telephone operator has, over the last three quarters of a century, been the symbol of service to the subscriber and the future bids that this will remain so.

I will give some thoughts on (traffic) force adjustment—a brief glimpse or two into some future developments and then later on will discuss a method for determining how to staff a small office.

First, I have chosen as my title "Sizing Up Your Force," which is probably a catchier phrase than "Force Adjustment," but, essentially, both mean the same thing.

The traffic man and chief operator have for over 70 years—not the same traffic man and chief operator, but their predecessors—have been sizing up their forces to plan for the everyday handling of calls.

It definitely appears that this will continue for many years to come even though the telephone industry is rapidly becoming automated through the installation of complex switching equipment.

In many exchanges, customers can now dial their own station paid calls to all parts of the country and in a few exchanges, can even dial person, collect and credit card calls with only the momentary assistance of an operator.

The question, and it is an important one, is being asked by both top management as well as everyone in traffic, "What is the future for the traffic department in handling customer calls?"

Let us back up for a minute to consider what the advent of dial meant to us.

It is estimated that had not Mr. Strowger, a Kansas City undertaker, invented the dial, that every girl graduating from high school, would now need to work for the telephone company as an operator in a manual office. The situation is incomprehensible. We would have no young girls for the accounting and commercial departments and stenographers would nowhere be found. The fact is that the telephone business has really grown faster than the human capacity to handle traffic manually.

A couple weeks ago I was asked to prepare a long-range forecast of the

*Mr. Birch is Traffic Administrator of General Telephone Service Corp. of New York City. He presented this address at the recent convention of the Ohio Independent Telephone Association.

Time	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	
Date																	Total Hours
OPERATORS PROVIDED																	
June 4	1	1	4	5	6	6	6	6	6	6	6	5	4	4	5	5	5	5	6	6	6	6	5	5	6	6	4	4	4	4	74
OPERATORS REQUIRED																															
June 4	1	1	3	3	6	5	6	6	6	6	4	4	3	4	4	4	4	4	5	5	5	5	6	6	5	5	4	4	3	3	65
" 5	1	1	4	3	5	6	6	6	5	6	4	4	4	3	4	4	4	4	4	4	5	5	6	6	5	5	3	3	3	3	63
" 6	1	1	3	4	6	6	6	6	6	5	5	5	4	4	3	3	4	4	5	5	6	6	6	6	4	4	4	4	3	3	66
Avg.	1	1	3	3	6	6	6	6	6	6	4	4	4	4	4	4	4	4	5	5	5	5	6	6	5	5	4	4	3	3	66

Fig. 1. HALF-HOUR FORCE RECORD.

personnel requirements in traffic for the General Telephone System. For days, I surrounded myself with calling rates for toll and information, station growth forecasts and the effects of Direct Distance Dialing (DDD) on toll service.

The end results were really startling. Even with a program of continuous conversions to DDD, the system traffic department will grow from its present personnel group of 12,000 to about 20,000 people in 1976.

Growth for traffic seems to be more than just adding stations. For example, we have found that our toll business had increased 8.5 per cent in February over February of last year. Just about one-half of this is due to station gain —the other half of the increase results from subscribers making greater use of toll service.

The long-range forecast is one element of sizing up your force. No doubt some of you have projected your personnel requirements over the next few years and arrived at somewhat similar growth patterns.

Another facet on the subject of force adjustment would be a careful appraisal of supervisory requirements. Perhaps, too often, supervision is added in a growing office merely to maintain some established percentage. If we were to take time to analyze the work done by the floor supervisor, we might find that she uses a good portion of her time in assisting operators on calls that should have been understood and learned in initial operator training. The conclusion from such an analysis would be to strengthen the initial training program either by improving the training material or providing better instructors

Office_____ Dates of Count_____

Time	Calls				Time	Calls			
	1st Day	2nd Day	3rd Day	Avg.		1st Day	2nd Day	3rd Day	Avg.
6a-6^3					3 -3^3				
6^3-7					3^3-4				
7 -7^3					4 -4^3				
7^3-8					4^3-5				
8 -8^3					5 -5^3				
8^3-9					5^3-6				
9 -9^3					6 -6^3				
9^3-10					6^3-7				
10-10^3					7 -7^3				
10^3-11					7^3-8				
11-11^3					8 -8^3				
11^3-12n					8^3-9				
12-12^3					9 -9^3				
12^3-1					9^3-10				
1 -1^3					10-10^3				
1^3-2					10^3-11				
2 -2^3					Total Day				
2^3-3									

Fig. 2. PEG COUNT OF CALLS. Note: Form designed to cover period from 6 a.m. to 11 p.m. in the event the office normally handles heavy early morning or late evening traffic.

or we may even wish to lengthen the course of training. Any of these, may have the effect of decreasing some of the work done by the floor supervisor.

An analysis of the supervisor's work may show that except for brief spurts of time, the work in moving traffic occupies very little of the supervisor's time on the floor. Generally, you may find that far more time is devoted to adjusting chairs, correcting crooked stamps and getting operators out on relief on time.

Any study of force requirements must, of course, consider the provision of supervision, but only to do the work that can honestly be classed as supervision.

Some companies are rapidly converting to mark-sensing of toll tickets. Generally, this will produce no real force adjustment problems for traffic. In the larger offices, however, the need for full-time scheduling at "Rate and Route" desks may no longer exist and traffic management may find as a solution, the establishment of centralized "Rate and Route" bureaus to be more economical than maintaining desks in its various toll center offices.

Still another integral part of force adjustment is the taking and equating of peg counts. Stated simply, its purpose is to tell us how many operators we need, at what time and in what place?

By knowing these, we can plan to schedule operators throughout the day, evening and night hours in the proper number to handle the calls offered.

It is entirely possible that some of our traditional concepts of coefficients and peg count procedures, too, are due to be changed. These changes may come about because some real searching questions are being asked of the need to have separate day and evening coefficients—the real need to equate traffic 0 to 30 miles any differently than the remainder of intrastate traffic. The question is also being asked—Is it necessary to spend so many hours of operator and clerical time in counting miscellaneous work items and digits dialed?

I mention that these questions are now being asked because it is felt that even though the detailed methods developed for equating traffic served an important function over the years, it is time to take a critical look at these procedures also.

As most of you have come to appreciate, the procedures are involved and require time not only for pegging and equating, but also for training people to use efficiently a somewhat complex method in coming up with an answer of what we need to know—How many operators and at what time?

Number of Positions	Traffic Units Per Position
2	160
3	175
4	185
5	195
6	205
7	210
8	215
9 or more	220

Fig. 3. TABLE OF POSITION LOADS BY SIZE OF SWITCHBOARD.

I have tried to give you some idea of what may be on the periphery for traffic.

Now to get down to brass tacks and explore what we can do to smooth out some of our current everyday operations.

Appendix I, presented at the end of this paper, contains a suggested procedure developed for the purpose of determining how to compute operator requirements for small offices—those of less than 10 positions.

To give you a little history of this procedure—it was developed by Owen Jarboe, general traffic manager of the General Telephone Co. of California and first presented at that state's Independent telephone association convention. Its introduction was well received by both the Independent companies represented and guests from the Bell System.

As a point of interest, one of the Bell officials from San Francisco has since, on several occasions, been furnished additional copies when requested to give assistance to Independent companies in their force adjustment work.

Last year, I received a call for force adjustment material from our International Operations Department—something to guide them in administering a little more efficiently in the small offices in the Dominican Republic. Copies of the method were provided with translation into Spanish made by the chief operator there.

I understand the method was also presented in a traffic conference at the

Units Per		Number Operators Required
Half Hour	Hour	
50	150	1
150	300	2
300	600	3
400	800	4
500	1000	5
650	1300	6
750	1500	7
850	1700	8
1000	2000	9
1100	2200	10

Fig. 4. TABLE OF OPERATOR REQUIREMENTS. Note: If the actual number of units is more than 25 per cent of one of the steps, use the next higher step.

convention of the Washington and Oregon Independent telephone associations and is now in use in that general area.

Let us take a look into this procedure that has already received the blessings of some chief operators and see if there is something here that can be of value in some of your offices.

ITEM No. 1. *How to Make the Study.*

(a) The chief operator will maintain a half-hourly chart over, say a three-day period from 7 a.m. to 10 p.m. on which she will enter the number of people (operators) actually required to handle the traffic.

Referring to *Fig. 1*, you will see a chart set up to show how an operator count was made. The center line with data for June 4 was inserted to show the number of operators now scheduled in each half hour with a total of 74 hours used for the day.

The lower portion of the form shows the counts made by the chief operator over the three-day period with an average of the three days of 66 hours needed to staff the switchboard.

In taking the operator count, you will need to be completely honest with yourself about this, otherwise, the results of the study will be valueless. For example, if there are four operators on the board and you can see that only three are needed, put down three. On the other hand, if there are three and they are having difficulty keeping up with the traffic, put down four.

You will note on the form that regular scheduling methods in the example, showed a requirement of 74 hours for the day, whereas the chief operator's count determined that eight hours too many were being used.

This could amount to a substantial savings in operator wages over the year for this office.

On the other hand, the chief operator's count could have shown a higher requirement than the number actually provided in which case the force should probably have been strengthened to protect the service and decrease operator fatigue.

(b) In connection with the operator requirement count, a count of calls handled during the same three days from 7 a.m. to 10 p.m. will be taken half hourly.

Fig. 2 is a suggested form for the count of calls.

Although I stated previously that the count of calls is required for the period from 7 a.m. to 10 p.m., you will note the form is designed to include the time from 6 o'clock in the morning to 11 o'clock at night. The purpose for this is to take care of an office which normally handles heavy early morning or late evening traffic.

Office_____ Dates of Count_____

Time (1)	Calls (Avg.of 3 Days) (2)	Units (Col.1XCoeff. / (3))	Operators (4)	Time (1)	Calls (2)	Units (Col.1XCoeff. / (3))	Operators (4)
6a-6^3				3 -3^3			
6^3-7				3^3-4			
7 -7^3				4 -4^3			
7^3-8				4^3-5			
8 -8^3				5 -5^3			
8^3-9				5^3-6			
9 -9^3				6 -6^3			
9^3-10				6^3-7			
10-10^3				7 -7^3			
10^3-11				7^3-8			
11 -11^3				8 -8^3			
11^3-12n				8^3-9			
12 -12^3				9 -9^3			
12^3-1				9^3-10			
1 -1^3				10-10^3			
1^3-2				10^3-11			
2 -2^3							
2^3-3							

Fig. 5. COMPUTATION OF OPERATOR REQUIREMENTS AT SMALL OFFICES.

Notes:

(1) Column 2 is obtained from the peg count of calls.

(2) The coefficient for Column 3 is the Position Load obtained from *Fig. 3*, divided by the average calls per operator hour.

(3) The number of operators required is read from the table in *Fig. 4*.

(4) Form designed to cover period 6 a.m. to 11 p.m. in the event of heavy early morning or late evening traffic.

In counting calls for the office, consider—

(1) If the office handles local manual calls primarily, the count will be made of originating manual calls only.

(2) If the office handles toll calls primarily, the count will be made of out toll calls only.

(3) If local and toll are handled on separate positions and the force handling each is approximately equal, a count will be made of both local and toll.

(c) When the count of operators required and the count of calls have been completed, we are then ready to summarize the results.

(1) First, an average will be taken of the operator hours required for the three days, both by hours and for the total day.

In our example in *Fig. 1*, the average was computed to be 66 hours for the total day.

(2) Secondly, we will take an average of the calls handled for the days of the operator hours count.

To develop our office sampling, let us assume that our count was taken in a manual office which handles a small proportion of short-haul toll. The number of calls counted for the average day (7 a.m. to 10 p.m.) is 6,800 local calls.

(3) Our third step now is to develop the average calls handled per operator hour.

By dividing 6,800 calls by 66 hours we find that on the average 103 calls have been handled per hour.

(4) Through this very simple procedure we have now developed the essential ingredients to determine the coefficient for traffic on our manual switchboard.

Our next step is to find the operator load that we would expect to have carried in an office our size.

By referring to *Fig. 3*, we can select in the left column the number of positions filled during the busy hour of the count. Since our example showed this to be six positions, we read in the column opposite, the number of traffic units that can be carried at a switchboard of this size.

The number of traffic units per position in this case is 205.

(5) Now let us determine our coefficient by dividing the load per position (205) by the average number of calls (103) handled per operator hours.

Our answer is 2. This is the end-result of the study.

ITEM No. 2. *What the foregoing study accomplishes and how the results are used.*

(Please turn to page 49)

THE Plant Man's Notebook

BY RAY BLAIN, TECHNICAL EDITORIAL DIRECTOR

THE *NEW JERSEY Bell Magazine* recently carried an interesting story on how they have streamlined their method of taking traffic peg counts. A peg count, as most readers know, is a method used to determine how many calls are handled in traffic central offices, the hourly distribution of these calls, and the average work time involved in each call.

This article states that the first method of taking a peg count would be as outmoded today as using an abacus to add a lengthy column of figures. When telephone calls were first counted, operators tallied them by moving a wooden peg along an empty strip of jacks on the switchboard. That's where the term "peg count" came from.

Peg count results tell traffic people how many employes are required to handle calls in each office, and when they are needed. Data compiled in peg counts indicates how much central office equipment must be provided to speed calls on their way. It also indicates how revenues are to be divided.

There are two basic types of peg counts. A regular count totals the number of calls handled and indicates their hourly distribution. The supplementary count is a detailed analysis of each call to determine the average work time involved.

Until recently, regular peg counts were taken two days a month in toll offices by the New Jersey Bell. Supplementary count data was compiled about three times a year covering a three-to-four-day survey period. Most of this work was analyzed by central office personnel in a 100 per cent check of calls on the designated days.

In 1955, a study was started by this company to determine whether a more accurate, faster, and less expensive method of obtaining toll peg count information could be developed. After studying existing methods, a new approach was adopted.

Instead of periodic counts, a continuous daily sampling method was developed using about 1 per cent of special green-lined peg count tickets that were included in the regular supply. Information from the peg count tickets was transferred to Mark Sense IBM cards which were processed through a computing machine to produce a monthly report for toll offices.

There are a number of advantages claimed for this new approach to peg counts. By pre-determining the right sized sample of tickets to review, accurate results are achieved with a minimum amount of work. Daily results give a better overall picture than periodic checks.

A manual breakdown of the 100 work operations involved in completing all types of calls was difficult. Extensive use of machines means more rapid results at much lower costs.

•

We are told that our 49th state has the country's youngest population. On a percentage basis, Alaska has more babies and fewer old people than any other state. About 24 out of every 100 Alaskans are under 5 years of age, but only four of every 100 are over 65.

•

The *Indiana Telephone News* informs us that at least 100,000 Hoosier homes in the territory served by Indiana Bell Telephone Co. are still without telephone service of any kind.

Four and eight-party service is providing minimum service to at least 200,000 homes. Some 420,000 homes have only a single telephone instrument.

Furthermore, there are nearly 520,000 black telephone instruments in service in this age of color. Also there are some 200,000 Indiana residence subscribers who do not place a single long-distance call in any given month.

This is indicative of a section of the merchandising field that is available for plowing, not only in Indiana, but everywhere. Subscribers whose homes do not enjoy complete telephone service—even by 1959 standards—represent additional revenues running into many millions for all operating telephone companies.

•

Passenger cars continue as the nation's chief means of transportation. Eighty-eight per cent of all inter-city travel is by car, and 68 per cent of employed persons drive automobiles to work.

•

We have a letter from M. B. Wetzell, general manager of the Champaign Telephone Co., Urbana, O., in which he mentions the fact that he has not seen a red-headed pole-boring woodpecker in his area for the past 20 years. Mr. Wetzell wonders what has become of them.

This reminds us that we have not had any complaints of damage from this pest for some time now. It may be that the species is becoming extinct. If any of our readers can give us any information on this subject, please let us hear from you.

•

It is reported that in this fair land of ours, about 4,000 motorists run out of gas each day and not one of them is in sight of a filling station.

•

One is said to be old when he does more and more for the last time and less and less for the first time.

•

It is claimed that giving a man a title, rug, or secretary, won't make him an executive.

•

More on the novel out-of-town hotel reservation system which was installed in the Washington, D. C. National airport and discussed in this column in the June 6 issue. A total of 20 handsets

are mounted neatly in a rack. Two of these racks are installed in the main air terminal building. The telephone number is indicated on the handset number plate. Some handsets are for day and night service. Others are for either day service only or night service only.

A designation strip indicates the handset to use to make a reservation at each hotel or at several, which obviously belong to a chain. Pick up a handset and you have a direct line to the reservation office.

Illuminated colored pictures describe most of the hotels being served. Reservations can be made at numerous hotels through the East.

New York, Boston, Philadelphia, Atlanta, New Orleans, and Pittsburgh are among the many cities served by this system. A sign advises you to make your hotel reservation before you travel. Obviously, this system provides a worthwhile service to the traveling public and proves to be a lucrative business for the telephone company.

•

Time and temperature play a most important part in the lives of all of us. The provision of accurate information on these two at all times of the day and night is a problem of long standing.

This problem has been successfully solved by a new time-temperature announcement system. This system is designed to provide a high quality announcement comprised of a message, the time, and the temperature, all on a completely automatic basis. A typical message from this system is as follows:

"Open a convenient First National Bank checking account. Time, 1:45 —Temperature, 72 degrees."

The temperature announcer audibly indicates temperature correct to the nearest one-half degree. The mechanism makes use of 152 different sound tracks on a magnetic drum.

The control circuit uses a resistance bulb thermometer coupled with a continuous balance Servo System to continually position the sound pick-up head adjacent to the sound track announcing the correct temperature.

The resistance bulb thermometer, an extremely stable, rugged, and reliable device is mounted on the exterior of the building—preferably on the north side—in a louvered box and is connected to the machine by three conductors.

The time-temperature announcer can probably be used to advantage in some exchanges to reduce the load on the weather-announcer system.

Plant Man's QUIZ

By RAY BLAIN, Technical Editorial Director

Q. Can you tell us what one-pair aerial distribution wire is and where it should be used?

A. This type of wire consists of two solid conductors spaced parallel to each other in a single extrusion of sheath grade black polyethylene with a longitudinal ridge for polarity identification.

The paired conductors recommended for general use are .064 inch—30 per cent conductivity Copperweld and .083 inch—Class A galvanized steel having a rated tensile strength of 155,000 psi.

REA suggests its use on power parallels as its susceptibility to induction noise is appreciably less than open wire. Its service life is expected to compare favorably with multipair distribution wire. Its maintenance cost per mile is expected to be much less than one circuit of open wire and to compare favorably with multipair distribution wire. In general, its removal and reuse is feasible.

•

Q. Do you know if the use of tape will prove satisfactory to close splices in aerial plastic cable?

A. Some of the new plastic tapes have proved extremely successful in the splicing of this type of cable. There are also splicing cases of various types on the market that are presently being used to advantage.

•

Q. Will you tell us if it is possible to rent a cable plow and tractor to install a fairly large job of buried cable?

A. While it might be possible to lease this equipment, we would not recommend this action. In our opinion, it is far better to obtain the services of a contractor who has all of the required equipment and the know-how to give you a good job.

•

Q. We would like to know what is considered the normal depth of buried wire and cable, either plowed or trenched?

A. This will vary to some extent due to the locality and soil conditions. The following are the depths recommended by REA specifications and are considered adequate to meet all general requirements:

	Cable, Inches	Wire, Inches	Services, Inches
Normal depth in soil	24	18	12
Minimum depth in soil	18	14	10
Minimum depth under drainage ditches	36	36	36
Minimum depth in rock, any location	6	6	6
Minimum depth at roadway crossings	24	18	18

The depths of buried services in the above table will generally be satisfactory. However, when these services must be placed across fields where farming operations are performed, it will be necessary to place the wire at greater depths. Subsoiling operations to a depth of 24 inches are being carried out in some areas of the United States. This would, of course, impose a problem in areas where it is normal to farm to the edges of roads and well into the road right-of-way, in locations where the cable or wire cannot be buried in the roadbed or on the shoulder.

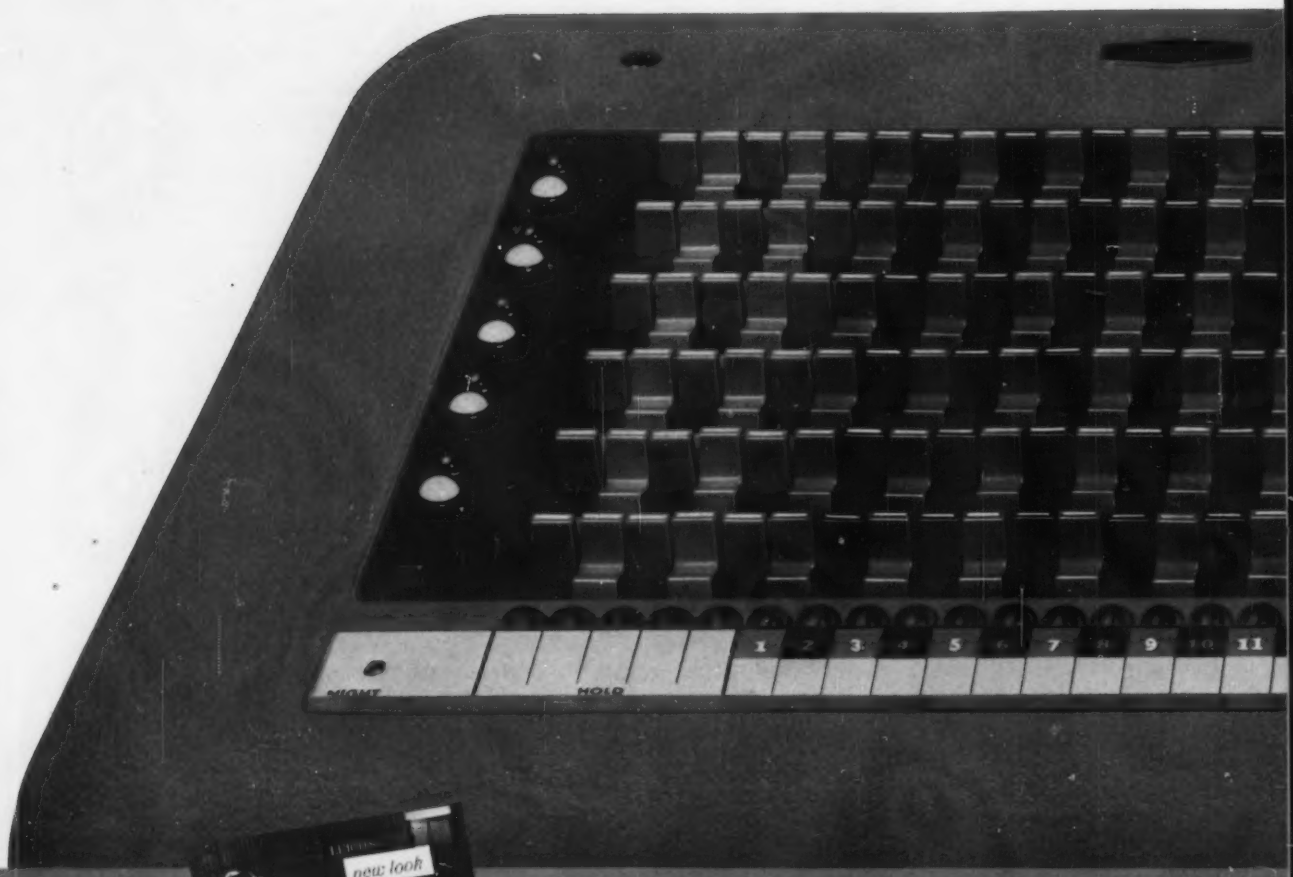
•

Q. What type of emergency power do you recommend for use in operating calculagraphs during a failure of the commercial power?

A. The Lorain 60-cycle power supply units are designed to supply 60-cycle current for operating calculagraphs and switchboard clock motors from a commercial ac power source or dc standby source. When the commercial ac power fails, this unit automatically supplies 60-cycle current through a vibrator from the dc standby source. When the commercial power is restored, the unit discontinues the generation of 60-cycle current from the dc source and again utilizes the restored commercial power supply.

LEICH'S *new look*

The switchboard that sells itself to your subscribers



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GENERAL SYSTEM

Subsidiary of GENERAL TELEPHONE & ELECTRONICS

CORDLESS PBX

Years-ahead styling makes the Leich PBX a switchboard that sells itself. An amazingly simple keyboard lets an operator handle calls faster and easier than any PBX you've ever seen. And Leich's Cordless gives your subscribers all the service features that they desire most.

On top of these big improvements, you have a PBX switchboard unsurpassed for dependability. Thanks to a simplified arrangement of working parts, costly service calls are kept to an absolute minimum with Leich's Cordless PBX. Improved one-way keys assure dependable service. Here is the switchboard that sells itself — in style, in features, in dependability.

You can offer subscribers excellent delivery because these Leich PBX's are available from stock.

modern, compact, easy to operate

A new approach to styling—neat lines, neutral gray finish, small compact cabinet! What more could subscribers want than this 16½" x 16" x 7½" beauty with all the features of larger, more cumbersome boards. The Leich PBX fits easily on the desk and leaves ample room for other work.

But the key to its sales appeal is a simplicity of operation that makes any office girl a switchboard operator. The ingenious key arrangement makes it simpler to handle all the functions of the board. Visibility of keys is better—even numbered station line keys are beige, odd are black, and trunks are gray.

Each key operates in one position only, eliminating confusion and reducing the chances for error. All of this makes the Leich PBX a real good deal for subscribers—it sells itself.

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Miss PBX Service Adviser—

"Your Personality Is Showing"

By GILBERT R. BRACKETT

IN RECENT years I have traveled over most of the states in the union and during these journeys I have met many PBX Service Advisers. Telephone Companies have chosen these representatives wisely. Most of these talented young ladies are outstanding in their deportment, unerring in their judgment of human nature and entirely familiar with their work of teaching telephone sanity.

They have been proud of their assignment and of the company they represent. They take very seriously their contacts with the PBX attendants, the extension users and the management of the PBX customers they supervise. They are sincere and have an honest desire to help their customers with their telephone problems.

These Service Advisers' recounting of the solutions they found to many PBX difficulties sound like excerpts from the Arabian Nights all of which convinces me they have a genuine interest in their work.

Enthusiasm Refreshing

It is very apparent that the PBX Service Advisers have sold the importance of their job to themselves. Each one I interviewed is a firm believer in the Golden Rule and practices it diligently in all her contacts with her PBX people. They are truly ambassadors of goodwill, diplomats who have won many friends for the telephone industry and for themselves.

Recently, on a visit to Santa Maria, Cal., I met two outstanding members of the service advisers exclusive group. They represented the General Telephone Co. of California. Their job exuberance was indeed refreshing. Their interest in their work was proven many times during our brief conversation. Indeed, I spent a very interesting session with them, discussing PBX service and the growing importance of the PBX customer. I grew humble as I listened to their enthusiasm and realized that there are many people still in this confused old world who give unstintingly of themselves to perfect their job performance.

The enthusiasm and experiences of these two California young ladies are typical of PBX Service Advisers the country over. They have become adept in dealing with people. They have learned that patience and unselfish effort not only help solve stubborn problems, but bring to them a great deal of personal satisfaction in the knowledge that they have done their best.

They have discovered that there really is no secret to dealing with people. They show happiness in their eyes and that reflects in the work they do and brings approval from the PBX customers with whom they work. They have trained themselves never to be too exacting, too demanding, too critical or too strict whether they contact attendant, extension user or management. Because the Service Adviser has pride in her work, the recipients of her teachings absorb much of her enthusiasm.

The Service Adviser is never quite satisfied with the job she does, because she knows that when such a thing happens, she will quit trying.

The PBX Service Adviser knows her people like a preacher of the gospel knows his parish. She has gained such knowledge through observation and study. She has not worked with her people to find fault, but to ascertain their training needs, so she may guide them along the paths of good telephone service. She gives each one she supervises full credit for what they do and know. She treats each person as an individual because she knows that will make her own job more easy, more pleasant and far more interesting.

No Perfect Attendant

Most PBX Service Advisers tell me that after they become capable of distinguishing between intractableness and mischievousness, and when they do not expect all PBX attendants to be top performers, the average girl is easy to approach, easy to talk with and easy to understand. They say they never search for the perfect attendant because they know there is no such person—that all attendants have their faults as well as their good points.

She gets to know her PBX people through study in observation of their work habits. By becoming a good listener, she learns many things she would never have known had she done most of the talking. She has learned the art of good listening, a talent she practices on and off the job. Her questions are short, tactful and sympathetic, the attendant gains courage and rids herself of little difficulties that could grow into big problems.

The Service Advisers I have talked to say they never try to underestimate a person's intelligence. They never laugh off an inquiry as silly. They understand that when a person has the intelligence to ask a question that, no

matter how inane the question may be, he will understand the answer if it is given in a clear, precise manner. She is aware that there are two kinds of students, the quick to learn and the plodder and, therefore, she governs the speed of her presentation to the pupil's ability to absorb.

PBX People Need Supervision

All supervision could not be withdrawn from any business. This the Service Adviser knows. I have found that most PBX attendants are aware they need supervision, if they are to do a good job. They even welcome it when it is given with the right spirit and not in a critical way.

Should you wish to hear an example of good English, a pleasing tone of voice, and exemplary use of the right word, take a moment from your many duties and listen to your Service Adviser as she explains to you her duties, her job accomplishments and her ambitions. She is a master of smooth conversation..

Through research and application she has discovered that soft spoken words and phrases will bring much more cooperation from the people she works with than would the dictatorial shouts from one who is bossy. She has also learned that soft words turneth away wrath and that praise, when it is deserved and sincerely given, becomes a smoothly operating key that unlocks many closed-door minds.

Most PBX Service Advisers I have met have had a genuine desire to be well thought of by their people. They use the "we" approach to PBX problems instead of the "I" approach. They agree that such first steps offer many more possibilities of meeting the changed conditions they are faced with today. One Service Adviser said to me, in explaining her manner of approach:

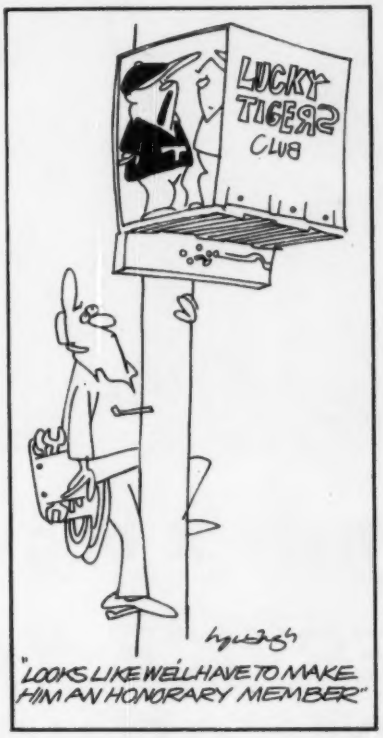
"I have had little trouble in learning routines. It took little study to find the answer to most PBX technical problems. But knowing people and learning how to work with them was an entirely different matter. My duties cover contacts with attendants, extension users and management folks. I cannot tell them what to do. I found I must sell them on the happiness one gets out of cooperating. I try to convince them that doing a job well not only brings about personal satisfaction, but increases the job prestige and promotes, more surely, job advancement.

"The 'we' approach has carried me across many seemingly impossible obstacles on the road to service improvement.

"I have found that fairness, helpfulness, sympathetic understanding and mutual confidence has been the key that opened the locked door of ignorance. I try to make each person I talk with feel that they are needed and that they are an essential part of their firm's organization. I am a pretty lucky girl to have been chosen for the job I have. I look forward to it each day. If, when quitting time comes, I have helped one PBX attendant to solve a knotty telephone problem, I go home, happy in the thought that my day has been well spent."

Job a Series of Complications

The PBX Service Adviser's work is a series of complications. Every PBX attendant is entitled to, and should receive, courteous understanding and intelligent guidance. In turn she should be made to realize that she is a part of a team and it is her responsibility to carry her share of the load and to do it willingly and efficiently.



I agree with the Service Advisers I have met—that their job is a combination of understanding equipment, knowing operating routines and dealing with people and that, while experience and imagination are a great help, the continuous application of the Golden Rule is a most important requisite.

Telephone companies should be very proud of their PBX Service Advisers and the wonderful job they are doing in cementing a friendship and understanding between the companies and their PBX customers.

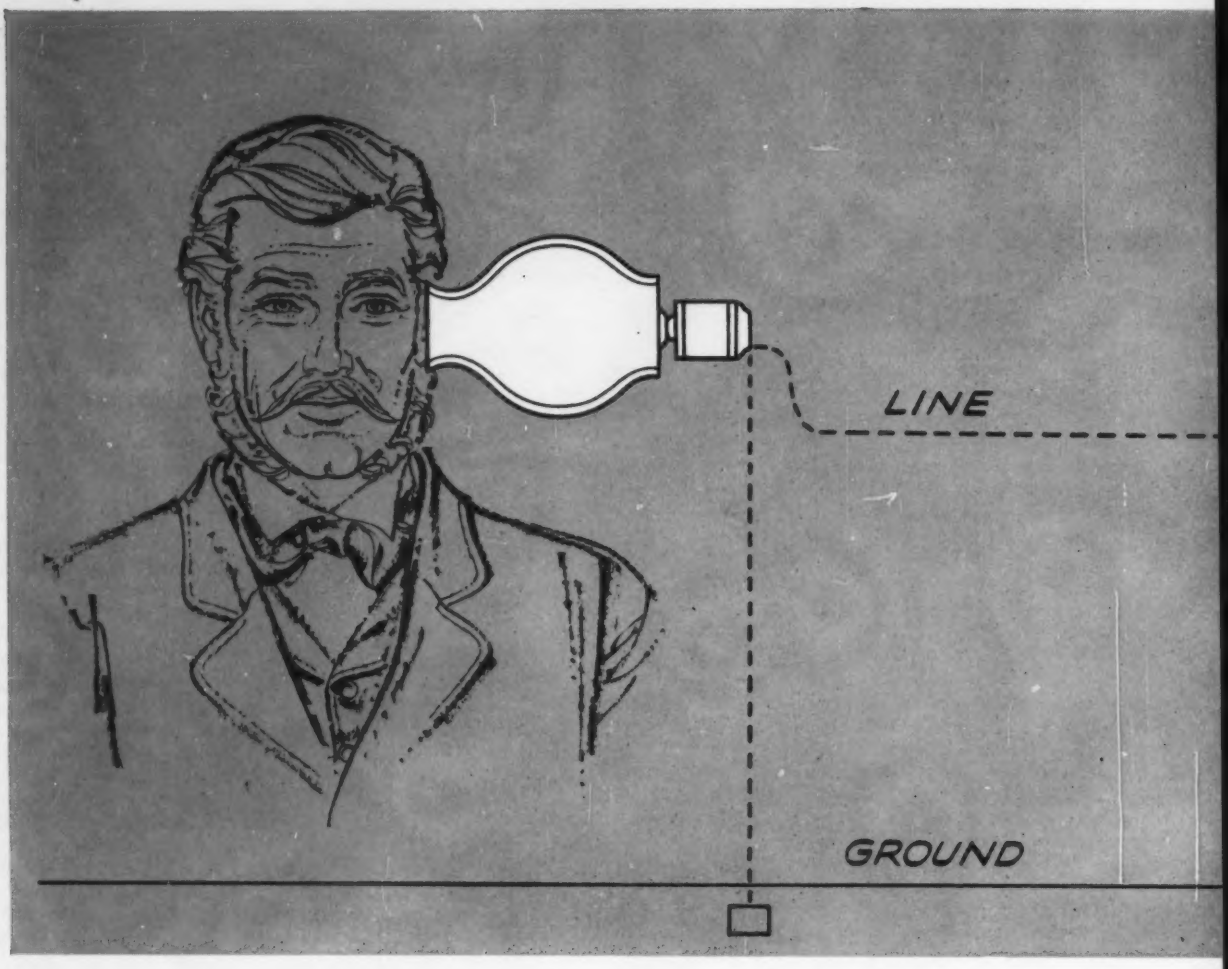
The training of our PBX people is a never-ending task. The turnover of attendants calls for constant vigilance, if we are to maintain our present level of PBX service. PBX customers are increasing in numbers and they must receive close attention. Direct Distant Dialing (DDD) is expanding. PBX customers are the largest users of our toll facilities, it will be up to our PBX Service Advisers to step up the tempo of their instruction work, if the attendants, extension users and management people are to become fully informed of the many ramifications of DDD. Here the advisers will find their greatest challenge. Through their knowledge of the new service they will be able to direct their efforts in a campaign that should mean monetary savings to the telephone company and the PBX customer alike.

A Rewarding Job

After many years of close association with PBX Service Advisers and PBX people, I have come to the conclusion that these employes have one of the most interesting, enjoyable and rewarding jobs in the telephone business. They are a versatile group. One moment they are talking the language of a PBX attendant and in the next instant they are discussing a telephone situation with the top management, and doing mighty well in either case. Through study, observation and application they have accumulated an enviable over-all understanding of the telephone business and can, without hesitation, intelligently converse on most any plant, commercial or traffic subject.

I believe that today's telephone management is totally aware of the Service Advisers' excellence. It is certain that management has gone all-out in choosing the right type of young women who fit into an instructional program. I base this belief on the compliments that have come unsolicited from so many PBX people, like this one I received just the other day from the manager of a big establishment: "The girl who supervises our telephone service is doing a wonderful job. We are lucky to be able to obtain her help. She is tops. I don't suppose there are too many like her in other cities." I did not answer that question. I did not tell him that other PBX users like him had made the same assertion, and in other cities.

Both are to be congratulated—Telephone companies for their shrewd recognition of the importance of the PBX customer and the PBX Service Adviser for recognizing her responsibilities to help solve her PBX people's problems. Indeed, her ability to take care of all difficulties with dignity and efficiency cannot help but spell good public relations.



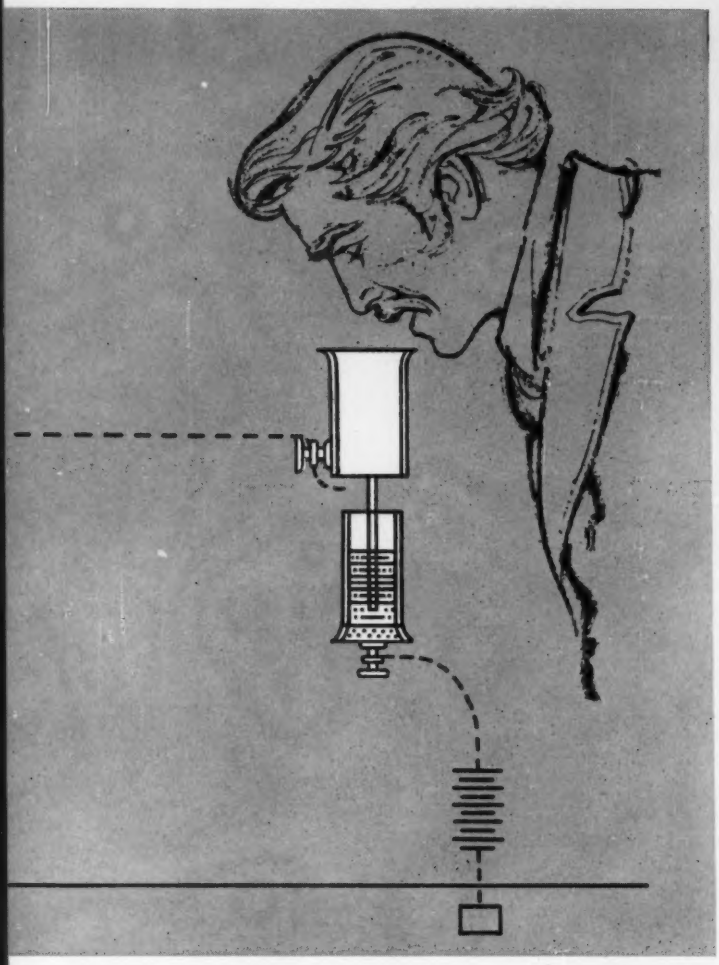
Where it began...

THE SERVICE YOU GET FROM GRAYBAR

The complete and dependable service you get from Graybar today had its origin in the intense interest Elisha Gray showed in telephony from the very first.

Elisha Gray was not destined to patent and manufacture his telephone commercially. But from the year the first lines went up, the organization that now is Graybar has been on hand with a comprehensive service planned for *you*.

As the telephone industry has grown, so has Graybar service to the industry. The current Graybar Telephone Catalog offers you everything from A-C Relays to Zig-Zag Rules – more than 14,000 items made by more than 300 leading manufacturers for the Independent Telephone Companies.



1869–1959 90th Anniversary

Drawings from the historic notification of Elisha Gray, who with Enos Barton was cofounder of the Graybar organization back in 1869.

This was inventive, Elisha Gray's formal notice of intent to apply for a patent covering an electric telephone. Date of filing: February 14, 1876.

Fluctuating electrical resistance was the principle of operation utilized in his idea, and is indicated in the view of the transmitter at left. Attached to a diaphragm is a rod, its lower end immersed in water. Changes in air pressure caused by the speaker's voice actuate the diaphragm, changing the depth of the rod's immersion, and thus the electrical resistance of the transmitter.

This is the Graybar service you can rely on today — always —

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420 Lexington Avenue, New York 17, N. Y.

Pennsylvanians Hold 57th Annual Convention

By Dan S. Fargo

THE Pennsylvania Independent Telephone Association's 57th annual convention was held at Buck Hill Falls on June 1, 2 and 3.

Association President Andrew J. Sordoni Jr. of Dallas, was unable to be present, so W. M. Gottschall of Lansford, presided at the opening meeting.

Andrew J. Sordoni Sr. of Wilkes-Barre, in his address, stated, "We Independents must continue to render *more* and *improved* telephone service. We cannot stand still." For example, he said:

"Direct Distance Dialing, with all its changes, will come into its own. We start with number changes, then intercept equipment, then terminal-per-station and, finally, this automatic toll ticketing.

"The Bell in this area will have most of its business on IBM cards instead of toll tickets in roughly a year's time. Do any of us think that we should continue to type our toll statements when records we receive from the Bell are already on IBM cards?

"And as soon as the Bell Telephone Co. of Pennsylvania is mainly Direct Distance Dialing on its calls, do you think we Independents can hold back in our areas and still purport to give modern, progressive service?

"Data transmission is another service that will come into its own in the future. Two of us Independents have the only SAGE sites in Pennsylvania.

"They tell me that the requirements of these circuits are 1,600 bits of information per second. Thanks to the research of Bell and allied scientists, and Bell's cooperation, we're already in this data transmission business."

Speaking on the matter of intercompany revenue settlements, Mr. Sordoni urged the larger companies to be fair with the smaller companies, and he added: "Settlement arrangements should be current; be fully compensatory, and reflect a fair division of revenues.

"Settlement arrangements must be such as to recognize the territory and rights of the Independent company—not such as to cause the erosion of boundaries, to cause islands with toll revenues drained off to a foreign connecting company. Settlements must be designed to promote over-all service and to promote more service—not to retard or restrict service.

"It must be realized that big toll revenue is generated at the large customer headquarters and not at the branches of that customer, and that although it's wonderful that industry is decentralizing to smaller communities, it will be noted that the communications requirement for a branch plant is primarily local in nature, plus toll to its headquarters.

"Let the larger telephone company work with the smaller telephone company, whether Bell, General or another Independent, and come up with equitable, compensatory and current settlements."

Mr. Sordoni paid tribute to the Bell System companies for their help in promoting nationwide standards of service excellence through their technical assistance to Independent companies. In like manner, he said, other large Independents should be helpful—technically, commercially and otherwise.

Mr. Sordoni also appealed to the Independent telephone industry to do its utmost to maintain the respect of our nation—technically and politically. He explained:

"This respect justifies our existence and staves off the threat of public ownership; of socialistic trends in industry; and repels restrictive and prohibitive taxation and regulation.

"The agitation around the time of World War I for public ownership led to a realization of the need for a strong and effective Independent industry, and ceased the acquisition and consolidation by Bell of the smaller telephone companies.

"Let's not forget this nor lose, through negligence, the respect which preserved our independence."

Officers and directors of the Pennsylvania association for the 1959-60 year are (left to right, seated): Harold G. Payne of Export; Lewis F. Shepherd of Erie; K. B. Schotte of Kittanning; J. H. Swope; J. K. Stoltzfus of Birdsboro, and Henry Y. Smith of Columbia, treasurer. Standing: A. C. Herbert of Harrisburg, executive vice president; L. R. Thurston of Harisburg; B. V. Cobler of Knox, newly elected president; A. N. Seward of Meadville; George M. Keefer of Gibsonia, vice president, and W. M. Gottschall of Lansford, vice president. Not present when photo was taken were G. A. Ruhl of Lewisburg; R. B. Scott of Waynesburg, and A. J. Sordoni Jr. of Dallas.

Part of the audience at one of the Pennsylvania convention sessions.

Hugh A. Barnhart of Rochester, Ind., president of the United States Independent Telephone Association, in analyzing "The USITA in 1959," said, "One of the most important things in the telephone business is this matter of public relations." He recommended frequent contacting of local newspapers, especially the editors, with the news on rate matters, emergencies and plans for construction.

As for what's ahead, he said, "We are living in a complex world, and the telephone business is no exception." He grouped the telephone with the auto and electric power as the three greatest inventions of modern times.

Mr. Barnhart predicted that in the next 10 years, every exchange will be part of the nationwide Direct Distance Dialing (DDD) system; also that there will be sizable growth in the yellow pages. He went on to paint a colorful and electronic future for the telephone industry.

Reporting on USITA activities, he urged Independents to set in motion or continue public information programs designed to encourage subscribers to agitate for removal of the federal excise tax on telephone service. He also asked for prompt contacting of Congress regarding its expected repeal of the 750-station operator exemption. He mentioned, too, that the USITA may "have its work cut out for it" to stop removal of the utility-facilities relocation reimbursement provision in the federal-aid highway act.

William R. Davlin, Pennsylvania secretary of commerce, listed as the state's advantages over its neighbors in the competition for industrial growth: labor in abundance; and water, forest resources and steel in great supply.

In his talk on "Industrial Development in Pennsylvania," Mr. Davlin said he believes the state is in excellent position to take advantage of the 75 per cent growth in the nation's production of goods and services forecast for the next 15 to 18 years.

Mr. Davlin described the state's efforts to relieve distressed areas. He said community non-profit corporations had been set up on a basis that calls for money to be advanced to a prospective business in the following amounts: local funds, 20 per cent; the Pennsylvania Industrial Development Fund, 30 per cent, and local banks or insurance companies, 50 per cent. He stated he feels this plan, in years to come, should lick the distressed area problem.

"Communications—Present and Future" was the subject of a technical demonstration given by A. L. Charny, general toll planning engineer of Bell Telephone Co. of Pennsylvania.

A. C. Herbert, association executive vice president, in his report which was circulated at the meeting in printed form, said, "In all but one respect we had a fairly good year (calendar 1958). But that one is perhaps the most important of all—total operating income.

"Our earnings showed a decline of 2 per cent in spite of an increase of 12 per cent in plant investment. So you can readily see that our over-all rate of return suffered a severe drop. The many rate increases that have been filed during the past year plus an assist from Mother Nature could make a decided improvement in this condition before the end of 1959.

"We almost reached the three-quarter million mark in total telephones, and had a net gain of about 33,000, or 4.6 per cent. At the end of 1948 we had 374,000 telephones, so we have almost exactly doubled that number in 10 years.

"During the same period, Bell had a 65 per cent increase, and recently installed its 4-millionth telephone in Pennsylvania."

The state's Independent plant investment of 209 million dollars, as of Dec. 31, 1958, represented an increase of 21 million dollars or 12 per cent above 1957, Mr. Herbert stated. This resulted from gross construction expenditures of over 25 million dollars.

Gross receipts almost hit the 50-million-dollar mark, or an increase of 6.8 per cent over the previous year. While the total number of employes remained the same, payrolls increased by 2 million dollars, Mr. Herbert pointed out. He went on:

"To provide the funds for this growth required some record high financing. Bell issued 50 million dollars of 3¾ per cent debentures and 40 million dollars of common stock. The 19.3 million dollars of Independent financing was about equal to the high of 1957. Of this total 4.4 million dollars was in common stock, 1:2 million dollars of preferred stock, and 13.7 million dollars of debt.

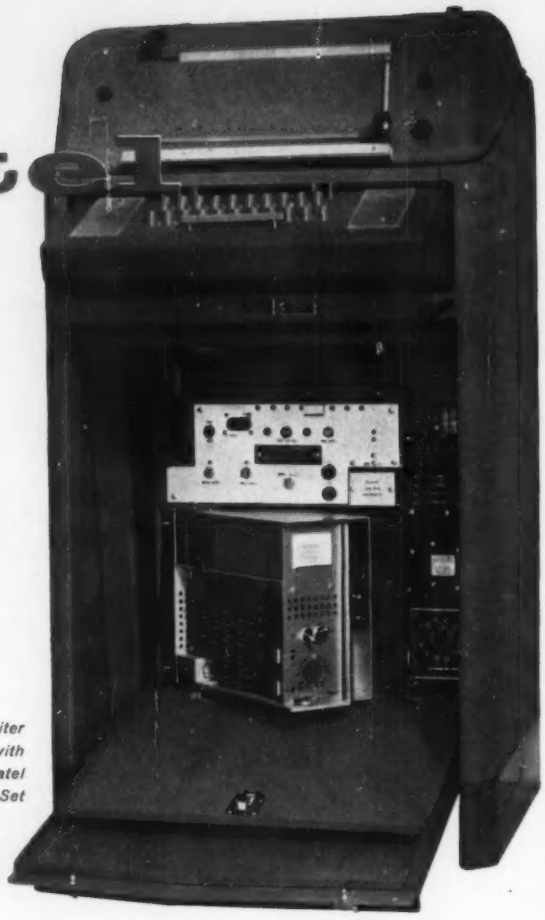
"The debt capital consisted of 4 million dollars of bonds and 9.7 million dollars of notes, most of which were for REA loans at 2 per cent interest. Other interest rates ran from 4½ per cent to 5¾ per cent.

Mr. Herbert also mentioned that with 15 per cent of the state's telephones still manually operated, and only 260,000 dial telephones on the 2-5 numbering system, there remains much work to do. In closing, he observed:

(Please turn to page 36)

Lenkurt datatel

THE NEW APPROACH TO PROFITABLE CIRCUIT GROWTH



Teletypewriter with Datatel Subscriber Set

Adds high-speed telegraph, telemetering, digital transmission and remote control facilities to any communications circuit

ALL YOUR COMMUNICATIONS NEEDS FROM ONE DEPENDABLE SOURCE

Lenkurt Type 23A Datatel telegraph carrier equipment opens up new and important sources of revenue from business and industrial concerns seeking ways of speeding up day-to-day transactions between offices and plants. It offers you the opportunity of getting more of the highly profitable leased-line and extra toll business *now*.

Lenkurt 23A is designed to operate over voice-frequency circuits, whether physical, carrier-derived, or radio. It can be used for carrier telegraph *up to 100 wpm*, or for the transmission of digital data, telemetering information and control signals.

Provisions are made for the simultaneous operation of 18 channels on a 4-wire circuit, or 9 channels on a 2-wire circuit. Eight additional 4-wire channels or four 2-wire channels are provided above the v-f range, between 3550 and 5050 cps.

Lenkurt Datatel is further proof that AE-Lenkurt is equipped to provide for *all* of your communication needs—planning, equipment, installation, supplies. *There's never need to look elsewhere.*

For full information on Lenkurt Datatel and companion equipment, call your Automatic Electric representative, or mail coupon today.

Check these features!

★ Frequency-shift telegraph carrier system with operating speeds up to 100 words per minute.

★ *Fully transistorized* equipment capable of operating directly from 48 volts d.c. (or 115-volt, 60-cycle mains if desired).

★ Low power consumption—only 2.5 watts dissipation per channel!

★ Trouble-free polar receiving relay provides greater flexibility in loop arrangements than electronic keyer.

★ FS operation affords greatest tolerance to level changes with smaller variations in bias.

★ Presence or absence of carrier can be used for signalling or supervision, as in TWX or TLX service.

★ Partially equipped systems can be installed with only one or two channels—expanded in small steps thereafter.

★ *One* channel unit type is common to *all* channels. Frequency-determining networks are plug-in, simplifying spare equipment requirements.

★ Transistorized circuitry and polar relay simplify servicing. A multimeter and VTVM are normally the only test instruments required.

Automatic Electric Sales Corporation
Northlake, Illinois
Attention: Mr. T. B. Collins, Director, Carrier & Radio Sales

Please send literature on:

- ☐ Lenkurt "Datatel" Telegraph Carrier Equipment
- ☐ Lenkurt "Mobiltel" Mobile Telephone Equipment
- ☐ Lenkurt Microwave
- ☐ Lenkurt Carrier

Name.....

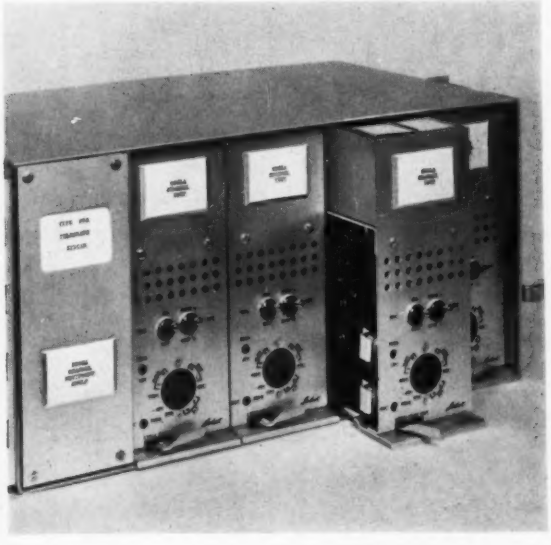
Title.....

Company.....

Address.....

City..... Zone..... State.....

In Canada: Automatic Electric Sales (Canada) Ltd., 185 Bartley Dr., Toronto 16, Ont.



Channel equipment shelf with 4 channel units

AUTOMATIC ELECTRIC

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"Much is being said these days about the importance of business men taking a more active role in politics, and we had speakers at each of our district meetings to talk on this subject.

"Certainly the need for us to speak up and defend the role of our business and all business in the welfare of our country becomes more evident every day."

"Most telephone people simply do not appreciate that the public does not understand the telephone business." This view was advanced by Stewart Phillips, of Erie, in his talk, "A Public Relations Man Views the Telephone Business." And, he added: "This is true even though I know of no business that has as many favorable opportunities to inform its customers about its operations nor do I know of any other business that needs public understanding more than does our business."

Mr. Phillips said the very nature of the telephone business, the fact that it is regulated enterprise, begs for public understanding. The vital character of the communications system makes lack of understanding almost inexcusable on the part of operating companies, he said. He pointed out that favorable public opinion makes it easier for operating companies to:

Secure right-of-ways.
Build pole lines.
Establish central office buildings.
Maintain plant.
Meet emergency or disaster conditions.
Hire the right kind of employes.
Collect bills.
Sell company securities.
Install service.
Compete for the consumer's spendable dollars.
Reprice service when necessary.

To obtain public understanding of the telephone business, Mr. Phillips advised starting at the top of the operating Independent, that is, with the chief executive. He said, "Here is where the keynote is sounded for your entire company. The attitudes and actions of the top men of management set the pattern —determine the course that will be followed by all other employes." To the chief executive, he urged:

"Do this. Go out into your business office and talk informally to some of your customers. Make it a point to discuss telephone affairs. Take them down to your cable vault. Take them through your equipment rooms—anywhere in your operation—and I'll bet you a good Stetson hat that they will—

"(1) Be extremely interested.

"(2) Express amazement at your operations.

"(3) Thank you for giving them a look at the telephone business.

"And you will have made a friend for your company. This will tell you something important—project your simple action in creating better public understanding to a continuous, well-rounded well-defined program using *all of your employes.*"

Grouping at Pennsylvania convention at Buck Hill Falls. Left to right: A. C. Herbert, association executive vice president; H. A. Barnhart of Rochester, Ind., president of United States Independent Telephone Association; William R. Davlin, Pa. secretary of commerce; A. J. Sordoni, chairman of the board, Commonwealth Telephone Co. (former senator and secretary of commerce of the commonwealth of Pennsylvania), and W. M. Gottschall, vice president of the Pennsylvania Association.

For employes to be well-informed and enthusiastic about a company, Mr. Phillips stated, it is desirable that each have:

A basic understanding of the importance of his particular job.

A grasp of the organizational structure of his company.

An understanding of the functions of the various departments.

A knowledge of how his own department, section, and job contributes to the ability of the company to function.

An appreciation of the importance of telephone service, and the responsibility he has to provide and maintain good service.

Confidence in the management's ability to properly direct the company's cause.

Other requirements for a well-informed employe, Mr. Phillips cited as follows: a general knowledge of the company's history; what is meant when one says the telephone industry is "regulated;" who are the owners and officers; what does the commission have to do with the company; is the company a monopoly; where does the money come from for expansion, and why must the company increase its rates occasionally.

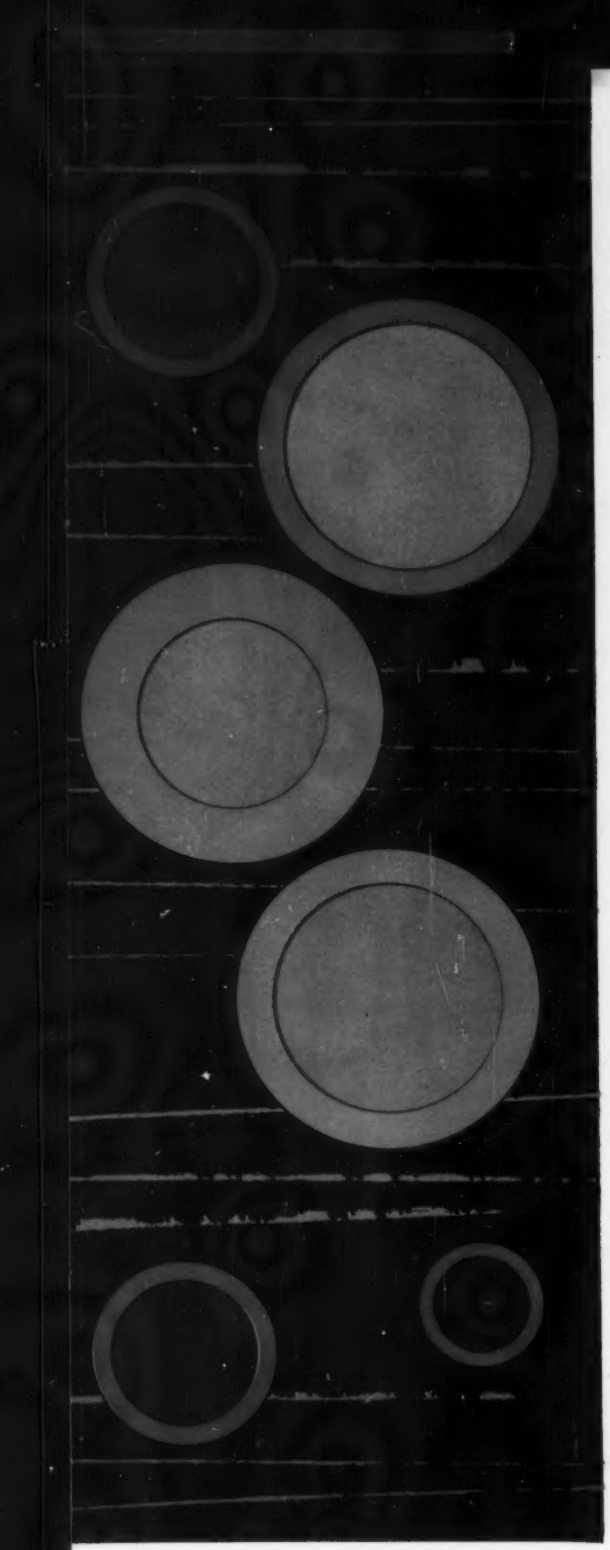
Dr. Nicholas Nyaradi, director, Institute of International Studies, Bradley University, Peoria, Ill., and former Hungarian Minister of Finance, forecast a dire future for citizens of the Free World, unless we keep up and expand our economies; retain free enterprise systems where they now exist; and improve our educational system. His talk was titled: "Free Enterprise or Disaster."

Dr. Nyaradi said he is still convinced, after a fact-finding trip to Europe last fall, that the basic Soviet plan still stands today—the Free World's subjection or destruction is still the final goal of the Russian leaders.

The doctor also believes Russia is ideologically bankrupt. He pointed out it was the Hungarian youth on whom Russia had concentrated most of their campaign of education and propaganda —and it was this same Hungarian youth who was willing to fight and die for freedom in the 1956 Hungarian Revolution.

Referring to labor's movements in the field of politics, he observed: "In

(Please turn to page 51)



When you specify *standard* **COPPERPLY®** (30% or 40% conductivity copper coated steel wire) for telephone wire or for rural distribution wire, you get the unique National-Standard advantages of precise concentricity and optimum uniformity with maximum corrosion protection.

But . . . if wire exposure doesn't call for the corrosion protection of 6 to 8 mils of copper—which is often true in heavier wire sizes—then you can get additional savings with *tailored* **COPPERPLY.** The enlarged cross sections illustrated at the left show examples of tailored coatings that can be produced by National-Standard's exclusive electroplating process to meet specific requirements. With *tailored* **COPPERPLY** you save even more because *you don't pay for excess copper.*

COPPERPLY has proved itself with contractors and telephone companies in over 50 installations across the country because it resists kinks, strings easily, provides long service life and accommodates future carrier circuits without additional line work.

COPPERPLY is available in continuous non-welded lengths up to 1000 pounds (high strength and extra-high strength grades) in all standard sizes from No. 3 to No. 18 AWG. For catalog information write to National-Standard Company, Niles, Michigan.

COPPERPLY
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DIVISIONS: NATIONAL-STANDARD, Niles, Mich.; tire wire, stainless, music spring and plated wires • WORCESTER WIRE WORKS Worcester, Mass.; high and low carbon specialty wires • WAGNER LITHO MACHINERY, Secaucus, N. J.; metal decorating equipment • ATHENIA STEEL, Clifton, N. J.; flat, high-carbon spring steels • REYNOLDS WIRE, Dixon, Ill.; industrial wire cloth • CROSS PERFORATED METALS, Carbondale, Pa.; decorative, commercial, and industrial perforated metals.

Courts and Commissions

New Rates Go Into Effect For New York Company

The New York Public Service Commission on June 30 accepted a tariff amendment filed by The Citizens Telephone Co., Hammond, N. Y., Inc., to increase its rates, effective July 1. The company provides dial service to about 450 stations in and near Hammond.

In filing the new tariff, the company declared it would operate at a deficit during the next 12 months under present rates because of increased taxes, labor costs and other operating expenses, which it said will exceed those of 1958 by about $5,400.

The new rates are expected to produce about $6,200 in additional annual revenue.

Suit Against Utilities Tests Utah Relocation Law

The question of whether the state of Utah should reimburse utilities for relocating their facilities to accommodate new federal highways was given to the Utah third district court on June 24 in a suit filed against three utilities, including Mountain States Telephone & Telegraph Co.

Atty. Gen. Walter L. Budge filed the suit on behalf of the Utah Road Commission to determine the constitutionality of a 1957 law allowing reimbursement to utilities for the expense of moving their facilities to make way for new federal highways.

Governor Clyde of Utah on Mar. 4, 1957 signed into law a bill to permit the state to share the cost of relocating utility facilities when necessitated by highway construction projects (TELEPHONY, Mar. 16, 1957).

In the suit just filed, Mr. Budge said there is a question whether the 1957 law violates a provision of the state constitution barring Utah from lending its credit to private enterprises or individuals. A sum of millions of dollars is involved, Mr. Budge said.

The road commission, except in isolated cases, has taken the position that the law is unconstitutional and has refused to pay the costs of moving utilities from public property to make way for highway improvement.

In cases where utilities signed contracts obligating themselves to move their facilities from public property to make way for highway improvement, where necessary to move, Mr. Budge said the contracts still will apply, regardless of the decision on the constitutionality of the 1957 law.

The utilities, including the Mountain States company, agreed that the court test should be made.

The 1957 law, which is being questioned, was passed after the 1956 federal highway act became effective. This act makes relocation of utilities reimbursable by the federal government. On the interstate system, the federal bureau of public roads, for example, would reimburse Utah for about 95 per cent of such costs.

Ark. Cooperative Gets Raise, Loan Approvals

Central Arkansas Telephone Cooperative, Inc., Donaldson, was granted permission by the Arkansas Public Service Commission to raise its rates and to borrow $59,000 from the Rural Electrification Administration it was reported on June 26 (TELEPHONY, June 6).

The company serves Donaldson and Bismarck. It intends to use the loan for additional equipment to serve 118 new subscribers.

Three in Ill. Ask to Sell

The applications of The Bell Prairie Telephone Co., the Dahlgren Telephone Co., and of the Macedonia Telephone Co. to sell their systems to the Hamilton County Telephone Co-operative were scheduled by the Illinois Commerce Commission for a July 9 hearing.

Missouri Company Asks Loan

The Missouri Public Service Commission has received the application of the A&M Telephone Co. for authority to borrow not more than $800,000 from the Automatic Electric Sales Corp. A hearing has been set for July 10.

Ky. Independent Asks Raise, REA Loan OK

The Kentucky Public Service Commission on June 23 was to have heard the application of the South Central Telephone Cooperative Corp., Inc., Glasgow, to authorize a service improvement program and to adjust rates.

Keith Jewell, president, says the expansion and improvement program will cost 1.1 million dollars. The company plans to finance the program through the Rural Electrification Administration.

According to Daniel B. Corman, manager, the company provides a wider scope of connections without a toll charge than any other telephone company in the state.

He states the new construction program will add an estimated 2,000 telephones to the system and will reduce the number of subscribers on rural lines.

Rule Ind. Co-op Must Serve Non-Members; OK Loan

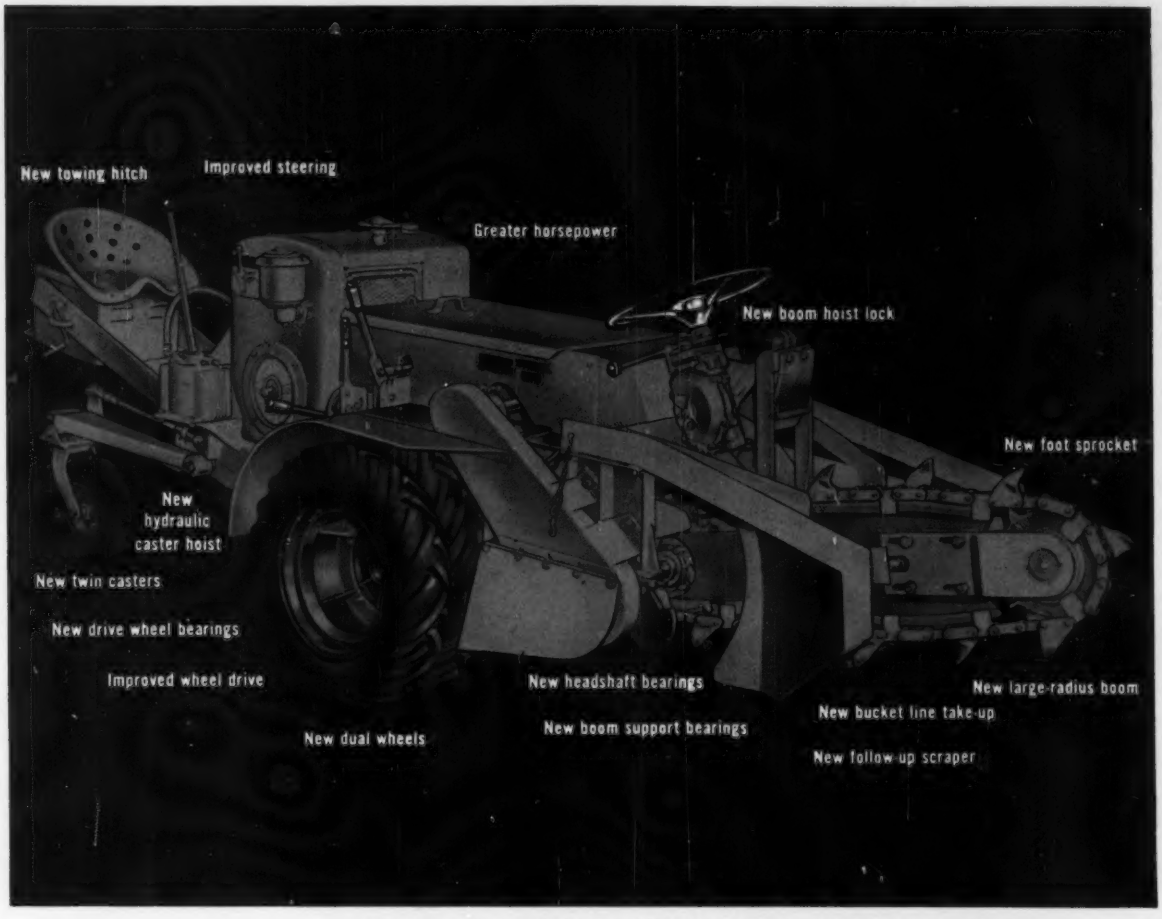
The Pulaski-White Rural Telephone Cooperative, Inc., Star City, on June 12 asked the Indiana Public Service Commission for a new hearing on the commission's order, recently reported, that the company must abandon its "join or else" policy (TELEPHONY, Aug. 30, 1958). The report said the commission ordered the co-op to give non-members service at reasonable rates.

The issue was raised by a dozen holdouts in the Lake Shafer area, where three small telephone exchanges were purchased by Pulaski-White with the aid of an REA loan.

The objectors were subscribers of the exchanges purchased by the co-op who refused to pay a $20 initiation fee to become stockholder-members of the co-op.

According to the commission decision, the point was whether a rural telephone cooperative in Indiana is required to give service to non-members, including both those who were receiving service from existing exchanges, and those who are not.

(Please turn to page 42)



No other ditcher equals the new 702-A for electrical, plumbing and excavating contractors, railroads, utilities, telephone companies, and government bodies. Write for literature.

Easier operation, reduced maintenance, greater maneuverability with

New Barber-Greene 702-A Ditcher

New cost and performance records for underground placement of gas, water, electric and telephone services, sprinkler systems, and all other work requiring narrow trenches were set by the Barber-Greene Model 702 Ditcher. The new Model 702-A offers even faster, more economical digging.

Maintenance costs are reduced by new headshaft bearings, new boom support bearings, new large-radius foot end, and optional foot sprocket. New positive boom hoist lock.

Greater horsepower and new reduced bucket line speed allow digging through tougher materials. New hydraulic caster hoist makes height adjustment easier, more accurate. Optional dual wheels allow machine to operate on unstable bases. Optional electric starter.

The 300% more brake area and improved lever action make steering easier, more accurate. Optional follow-up scraper assures clean trench. New bucket line take-up is readily accessible.

Faster towing with new tapered roller wheel bearings and improved towing hitch. Optional twin casters give better stability and steering, and allow machine to straddle trench.

58-43-D

Write for information on the newest ditcher in the line of advanced design.

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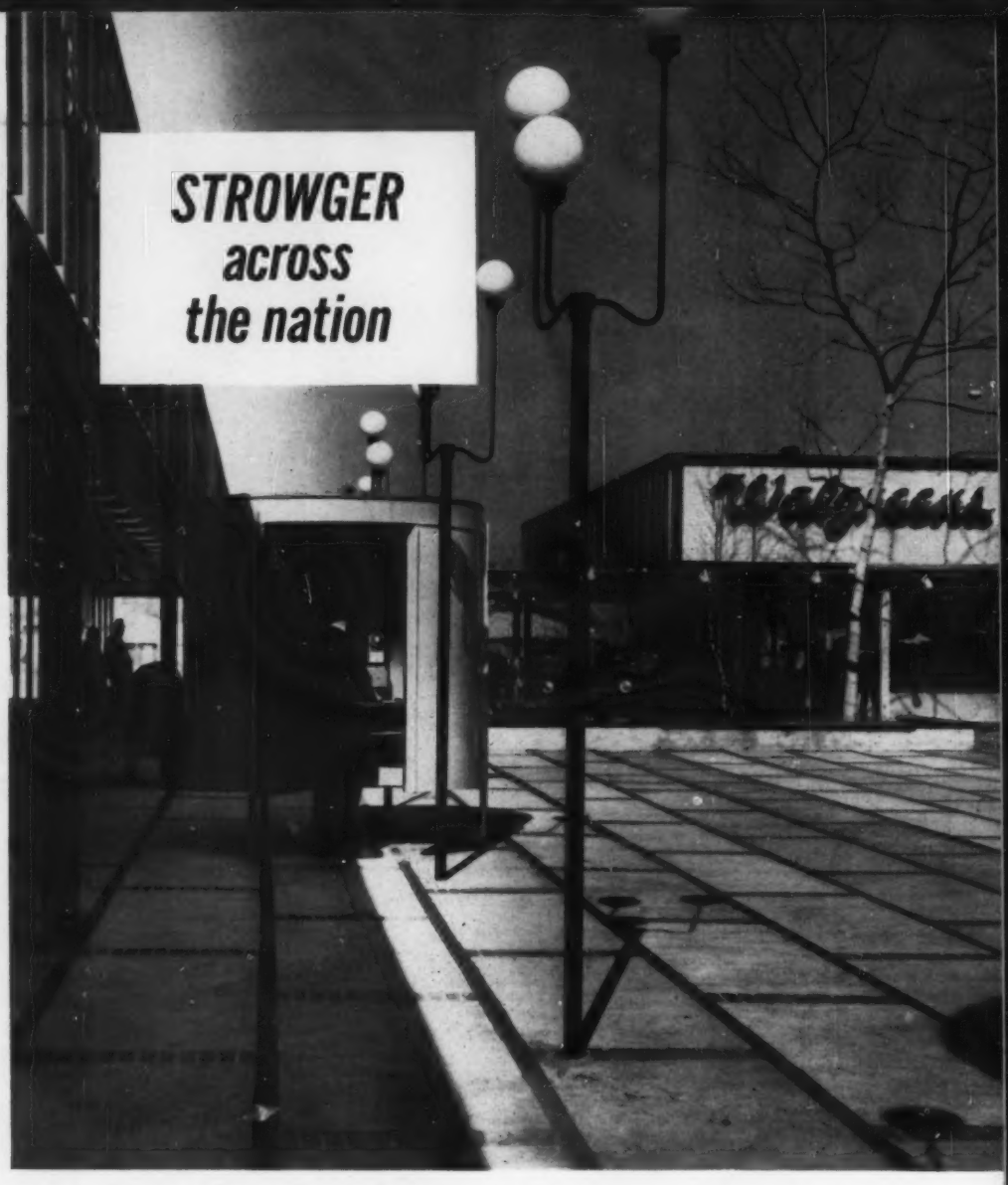
AURORA, ILLINOIS, U.S.A.

CONVEYORS . . . LOADERS . . . DITCHERS . . . ASPHALT PAVING EQUIPMENT



SHOPPING CENTERS are springing up in-and-around Park Ridge. Part of the sales tax on purchases made in Park Ridge is returned to the city treasury—helping to reduce real estate taxes. The circular booth (at right) was designed by Middle States Telephone Company; it has four recessed areas, each housing a paystation.

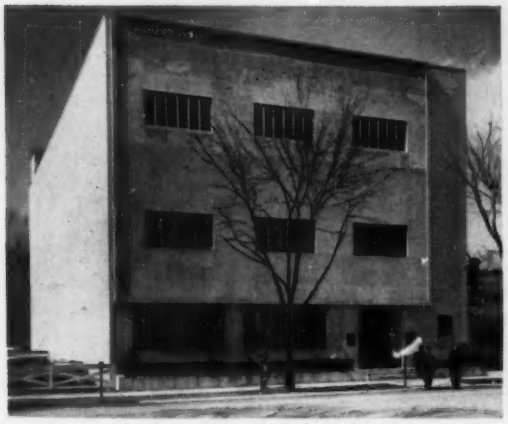
PARK RIDGE, ILLINOIS

Only a short distance from the hustle and bustle of Chicago, Park Ridge stands as a perfect example of suburban living

First suburb northwest of Chicago is the picturesque community of Park Ridge, Illinois. Here, the original concept of suburban living remains because Park Ridge is still a community of homes. Its people commute to other areas, mainly Chicago, to earn their living. Great emphasis is placed on facilities for educating and training children. This has resulted in several new parks, a new library and a highly-rated school system.

Residents of Park Ridge are active in a wide variety of cultural interests, which include music, painting, sculpture, crafts and hobbies, lecture and concert series. The population of Park Ridge is over 30,000—almost double that of 10 years ago.

Park Ridge is served by Middle States Telephone Company. Each day, Automatic Electric step-by-step switches work behind the scenes to give dependable, low-cost telephone service. Yes, Park Ridge is another success story of Strowger Across the Nation.

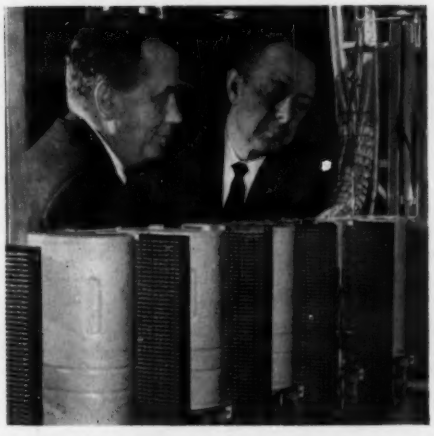


MIDDLE STATES TELEPHONE COMPANY erected this modern building to house the Park Ridge business office and exchange. Park Ridge, with a total of 11,950 lines, was converted to dial service and SATT in 1950. Middle States chose Strowger Automatic equipment to make its conversion.

COMMUTERS FROM CHICAGO ARRIVE HOME. A large percentage of Park Ridge residents work in Chicago and commute by train. The town is divided by the Chicago & North Western Railway. Nearing completion is a super highway which will provide fast travel to Chicago's Loop and O'Hare International Airport.

AETNA LIFE INSURANCE COMPANY occupies this impressive Colonial structure. It is one of several commercial companies in Park Ridge. Others include All-American Life & Casualty Company, and the sales office of General Mills. More commercial firms plan to locate here.

TREE-LINED STREETS and well-manicured lawns are a familiar sight throughout Park Ridge. In some of the newer sections there are no telephone or utility poles to mar the landscape, because all cable and wire is buried. The entire physical layout in Park Ridge is evidence that responsible people live here and take pride in their community. Over the years, Park Ridge has maintained rigid zoning laws.



WILLIAM McGREW (right), district manager, Middle States Telephone Company, describes growth of Park Ridge exchange to B. K. McCann, A. E. district manager. Park Ridge and Des Plaines were the first exchanges in Illinois to be converted to SATT.

AUTOMATIC ELECTRIC GENERAL SYSTEM

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The commission said that the law provides that telephone co-ops may give service to non-members numbering up to 30 per cent of the co-op membership, if they were formerly served by exchanges bought by the co-op. It may give service to non-members numbering up to 10 per cent of the co-op membership if they were not served by exchanges bought up by the co-op.

Besides accepting subscribers who agree to comply with the co-op rules, the co-op was ordered to give them rates which would not be discriminatory.

•

Also in Indiana, the Kirksville Telephone Co., Wheeling, has asked for permission to borrow funds to convert the Francisco and Cynthiana exchanges to automatic operation.

Merger of Soap Creek and Iowa-Illinois Cos. Told

The merger of the Soap Creek Telephone Co., Blakesburg, Ia., with the Iowa-Illinois Telephone Co., New London, Ia., was announced on June 24 by Russell Day of Ottumwa, president of the Soap Creek company.

Merger of the two companies involves a straight stock trade. Mr. Day will continue to operate the Soap Creek company as general manager, and his brother, Jake Day, will continue as manager at the Moravia exchange, the announcement stated.

Plans to cut over the exchanges to automatic operation financed by REA funds, will be carried out, and work on the actual conversion is now under way.

The merger, which, it was stated, will improve the Soap Creek company's ability to provide modern service in underdeveloped areas, has been under negotiation since Apr. 1. The probable effective date is July 15.

The Moravia exchange was sold to Soap Creek earlier this year (TELEPHONY, Mar. 21); and Soap Creek has obtained an option to buy the Chillicothe exchange and a major portion of the Iconium exchange near Moravia. Also, more than 75 per cent of the Ash Grove exchange subscribers, a mutually-owned exchange like Chillicothe and Iconium, have signed up to receive service from the Soap Creek company.

An early decision is expected in a district court case concerning the Soap Creek company's right to a perpetual franchise in Moravia, it was reported.

Mr. Day bought the Blakesburg exchange in 1952 and organized the Soap Creek company in 1957.

The Iowa-Illinois Telephone Co. is a subsidiary of the General Waterworks Co. of Philadelphia. It operates 45 exchanges in Iowa, all of which have been cut over to dial service in the last 10 years.

Approve Change of Status, Franchises for Pa. Company

The Wattsburg Telephone Cooperative Association on June 22 won its battle to convert to a corporation and to obtain franchises for areas in which it now provides service. The Pennsylvania Public Utility Commission announced its ruling in favor of the Wattsburg Co-op, which serves 440 subscribers.

The Wattsburg association had asked to sell to the Wattsburg Telephone Corp. earlier (TELEPHONY, Jan. 3).

The General Telephone Co. of Pennsylvania, which has facilities in the Wattsburg area, opposed the move on the grounds it was not in the public interest.

The Wattsburg association sought the change in status and the franchises in order to be eligible for a government loan, and to modernize the company's facilities.

Ask Ruling in Okla. on Liquor Stores Yellow Pages Listings

The Oklahoma Attorney General has been asked by the Southwestern Bell Telephone Co. whether or not it is legal to list liquor dealers in the yellow pages of telephone directories.

Under Oklahoma's new alcoholic beverage code, store name liquor ads are banned. Since every business subscriber gets one free listing in the yellow pages, liquor dealers would not be paying for an ad as such.

T. O. Gravitt, Tulsa eastern division manager, said the problem is whether such listings would be considered advertisements.

Omitted from Yellow Pages, New York Doctor Sues

Dr. Joseph Taubman of Lindenhurst, Long Island, N. Y., is suing the New York Telephone Co., for $30,000 damages because he has been unable since 1957 to get his name in the company's directory yellow pages, it was reported on June 23.

The doctor, an internist, contended in a Suffolk County, N. Y., Supreme Court suit that he has lost patients because of the failure of the telephone company to list his name in the Nassau and Suffolk yellow pages during the past three years.

New York Telephone argued that the doctor must list his "lost" patients to prove damages, and on June 22 Justice D. Ormonde Ritchie ruled in favor of the company's motion.

Dr. Taubman said in his suit that the company stresses in its advertising that the yellow pages are "the first place to look for anything," to which New York Telephone replied that, as there is no charge for professional listings, "no contract exists."

When Dr. Taubman moved to Lindenhurst from New York City in 1956, he had a telephone installed, and applied for a listing under "Physicians and Surgeons (M. D.)" in the Nassau and Suffolk yellow pages.

His name did not appear in the yellow pages in 1957, and when he complained, he received an apology and, his suit states, "a faithful promise" that the listing would appear in 1958.

His name did appear in 1958, but in the Queens directory. On this occasion, Dr. Taubman's suit reports, he again went to the telephone company, and when the 1959 directory came out and his name was not included, he sued.

The physician's attorney and uncle, Paul Taubman of New York, has said that it will be difficult to list the names of "lost" patients. He breaks them down into two groups, those who "never did make contact" and those who came to the doctor "perhaps a year later" when his reputation began to spread by word-of-mouth.

Justice Ritchie in holding for New York Telephone Co. in its motion for a listing of "lost patients," also said that the suit had "trialable issues." No trial date has been set.

File Schedule of Increased Rates in Pennsylvania

The Delaware Valley Telephone Co., Johnstown, N. Y., announced on June 24 that it had filed a new schedule of increased rates with the Pennsylvania Public Utility Commission.

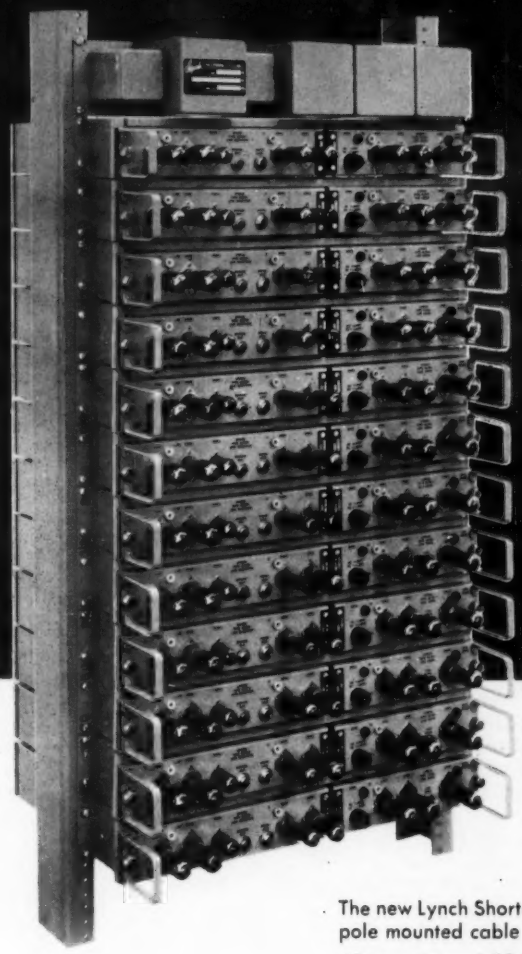
The company serves northeastern Pennsylvania communities, including Milford, East Milford, Dingmans Ferry, Matamoras, and Shohola.

President C. E. McCormick said that the increases would provide additional income of $19,500 after taxes. The company asked for about $40,000 additional gross revenue. Operating expenses were said by Mr. McCormick to have increased 106 per cent.

Ask Rate Increase in Neb.

The Nebraska Railway Commission on June 25 was to hear application of the Public Telephone Co., Blair, for authority to adjust rates at Arnold, Callaway, Oconto, Stapleton, Ewing, and Page. The company serves 2,215 stations.

B-630 A NEW STANDARD OF PERFORMANCE



New, low cost B-630 cable carrier achieves "breakthrough" in versatility

The new Lynch Short-Haul Trunk Carrier System with transistorized, pole mounted cable repeaters will serve as four different systems:

"System A" — A 10 channel carrier on open-wire 40-400 kcs, long entrance cables are no obstacle.

"System B" — A 5 channel carrier on open-wire, 40-208 kcs, uses half the frequency spectrum of System A.

"System C" — A 5 channel carrier on open-wire, 232-416 kcs, usable above existing single sideband systems.

"System D" — A 12 channel all-cable carrier occupying 40-416 kcs.

Request B-630 literature from Lynch or your nearest Lynch distributor

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Army Has New Mobile Communication System

By RAY BLAIN

Power unit trailer for Army Signal Corps mobile communication system. The cylindrical under-carriage of the power unit is hollow and will hold a 28-hour supply of gasoline.

A NEW mobile Army radio communication system has been developed for the Army Signal Corps which is geared to quick-reaction of small wars and brush-fire combat operations in trouble spots around the world. This communication central will be vitally important to commanders of STRAC (Strategic Army Corps) units.

This new equipment can be transported by air in three cargo airplanes or moved overland. It provides more voice and teletypewriter channels than ever before available in a high-speed mobile communication system. Known as the AN/TSC-16, it provides U. S. Army combat commanders a communication capability previously possible only in large, fixed radio installations.

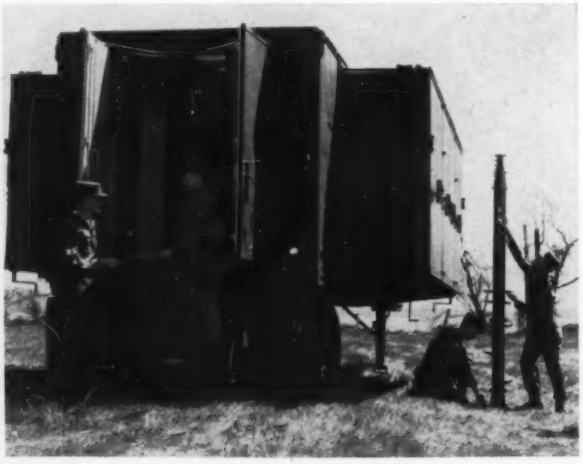
With an operational range of 1,000 to 2,000 miles, the equipment may be used to link the field commander directly with the Army's global communication system. A task force in Southeast Asia, for example, equipped with one of these units, could join the Army's world-wide network at points in Okinawa, Japan, the Philippines, or even Hawaii. Through any of these contacts, the commander of such a task force could talk direct with members of the Army staff in Washington. The additional channels provided by the equipment could simultaneously handle other operational messages.

The complete unit consists essentially of a single-sideband 10-kilowatt transmitter installed in a van, a receiver-communication center van and two trailer-mounted generators. The vans with tractors and power trailers weigh about 70,000 pounds.

The complete system, with 46 operating personnel, may be assembled and loaded into three C-124 aircraft, and be airborne within 12 hours. On arrival at the combat area, the communications central can be ready for interim operations in about four hours. About two days are required to erect a more efficient rhombic or diamond-shaped antenna for full capacity operation.

This system provides the combat commander with two voice channels for separate conversations, and as many as 16 teletypewriter channels. A facsimile facility can be substituted for one of the voice command channels, and an additional radio voice channel is available for technical or operator's messages. By comparison, the best combat communications system available to the U. S. Army forces during the recent Lebanon crisis provided no voice chan-

(Please turn to page 52)



LEFT: Outside view of transmitter van. RIGHT: Outside view of expandable type of receiver van.

News on New Products

VAPOR-COOLED POWER TUBES—A line of high-temperature, long-life power tubes that achieve extra reliability through a vapor cooling technique has started production Frank M. Viles Jr., vice president and director of marketing of the ITT Components Division, announces.

The tubes dissipate much more heat than conventional air- or water-cooled tubes, can operate for much longer periods without servicing, are noiseless, require no rotating parts, and can be adapted easily to existing tube designs, Mr. Viles says.

Under normal operating conditions, anode dissipation exceeds 800 watts per square inch, according to Robert W. Deutsch, division field sales manager. In tests on specific models, anode dissipation of 2500 watts per square inch has been maintained for several minutes without damage to the tubes, Mr. Deutsch stated.

Cooling equipment for these tubes is relatively simple, consisting of a boiler, filled to a definite level with distilled water, and cooling coils immersed in the water. The tube sits in the boiler and is sealed by its own weight. Steam that develops is recondensed in the boiler by the transfer of heat to water in the cooling coils. The rate of flow of water in the coils, depending on the power dissipated, is only a fraction of that required by conventional water cooling, Mr. Deutsch said.

The tubes may be used in modulators, amplifiers and oscillators in communication equipment. Request NP1130.

•

SATT COMPUTER—A new computer —featuring adjacent area controls— has been developed by General Telephone Laboratories to automatically rate toll calls in a SATT installation.

Designated the Type 59 SATT Computer, the new unit, supplied by Automatic Electric Co., is described as featuring six-digit—area code plus office code—analysis of calls terminating in adjacent areas. The circuit can be arranged to handle several numbering plan areas, but is usually limited to the one or two adjacent areas that terminate a significant volume of SATT calls. An adjacent area relay circuit is provided for each such area.

AE says the all-relay unit accepts coded information on the originating rate center, the destination code, the conversation time and the rate period as an input—and returns the total charges in dollars and cents for the completed toll call, as an output.

Since the computer cycle is said to take only a fraction of a second, one unit could serve an entire ticketing network, made up of a main office and various branch offices which are served by a common pool of ticketing equipment from the main office.

The Type 59 SATT computer mounts on a standard 11-foot-8-inch relay rack. Adjacent-area relay circuits are mounted on a second rack.

For those installations with a single originating point, the company says a single adjacent-area relay circuit can be substituted for the originating rate center controls on the computer rack. Request NP1131.

•

BASE PLATE DESIGN FOR WALL TELEPHONE—Automatic Electric also announces it has made several changes in the base plate design of its type 90 wall telephone. The new design features three-point mounting, with allowance for easy alignment and installation on the wall.

As shown in the picture, the redesign permits replacement of parts from the front of the telephone while

the base plate remains on the subscriber's wall. The new type 90M telephone is available in black, and in the full range of 10 colors. Request NP-1132.

•

CABLED LOOP GUY-GRIP DEAD-END—A cabled loop guy-grip dead-end with smoother contouring and decreased dimensions of the loop has been developed by the research & engineering center of Preformed Line Products Co. Decreased dimensions of the cabled loop have resulted in a reduction in the overall width and in the cabled diameter in the bend of the loop.

The new cabled loop is more durable,

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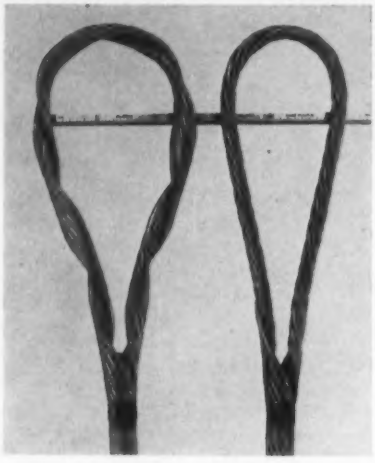
Preformed states, and has greater abrasion resistance. Smoother contouring permits the bend of the loop to be better seated in the groove of the hardware. As with the standard loop design, the cabled loop guy-grip dead-end is capable of holding the full rated breaking strength of the strand to which it is applied, according to the company.



The new cabled loop guy-grip dead-end is said to offer a major advancement in easier tensioning (1) when initially installing a single guy; (2) when constructing additional guys in support of a single guy; and (3) when constructing multiple guys.

Applications can be accomplished without high tensions being applied to the guys at any time during their construction, the company says. Re-tensioning is quick, easy, and requires only a line jack and screw driver.

The cabled loop dead-ends are available for use at the top, breaker, and anchor rod in 5/16-inch, 3/8-inch, 7/16-inch, and 1/2-inch diameter sizes, and in a full range of materials, such as galvanized steel (utility grade, high-strength, and extra high strength); Copperweld (including the M Series); Calsun bronze; aluminized steel; stainless steel; and Alumoweld. Request NP1133.

•

EXTENDED-RANGE BATTERIES—A new series of flat-plate batteries has been added to the Exide plastic-jar line of stationary batteries which are said to extend the range of eight-hour capacities available in this line upward by 1020 ampere-hours.

Designated Type FWA, the new series consists of four sizes with eight-hour capacities ranging from 840 to 1680 a-h.

These types—all designed for float-charge service are said to feature:

Corrosion-resistant Silvium alloy in

lead-antimony grids, for long life

Special explosion-control devices, for safe operation

Shock-absorbent plastic jars and super-impact plastic covers.

The augmented line provides a selection of sizes for applications in Independent telephone service, in microwave systems, emergency lighting, laboratory instruments, switchgear and other similar industrial applications.

Assembled as single-cell units, the FWA models have 15, 19, 23 and 29 plates. Capacity ratings (eight-hour) respectively are 840, 1080, 1320 and 1680 a-h.

Exide FWA batteries have positive plates containing Silvium, which the company describes as a patented alloy of silver, lead and other materials with a high resistance to electrolytic corrosion. It extends expected battery life and provides protection against damage caused by overcharging.

The special explosion-control device, the company says, is a safety feature, used on other Exide stationary batteries, for venting gases. It consists of a polystyrene hood or baffle over the plates which collects the gases and channels them through a cylinder vent and plastic vent plug. The cylinder vent accommodates a pilot-cell hydrometer or thermometer.

FWA batteries are described as having jars and covers of lightweight, heat-resistant, shock-absorbent polystyrene. The covers are bonded permanently to the jars, for leak-proof construction. Burned seal rings and gaskets prevent electrolyte seepage around the heavy, square terminal posts.

Elements are suspended on alloy hanging bars from ledges molded within the walls of the jars. Soft rubber ledge strips are said to cushion the elements from shock or vibration.

Tie rods across the top of the elements hold down separators and keep plates in alignment, Exide says. Support rods in molded slots at the bottom of jars prevent separators from falling out of position.

Negative plates of .172-inch thickness are provided for matched performance with the ¼-inch positives.

Ribbed microporous separators and spun-glass Vitrex retainer mats—both highly resistant to chemical and electrolytic action—insulate the plates, according to the company.

Uniform, high porosity of the separators permits free passage of electrolyte, assuring delivery of high rates of current at maximum voltage. The retainers hold the active material firmly in place at the grids, Exide states.

The FWA batteries have a space above and below the plates for reserve electrolyte. In normal float service, in which a battery always is connected to the charging line, water needs to be added infrequently. Electrolyte level lines marked on all four sides of the jars indicate when water needs to be added.

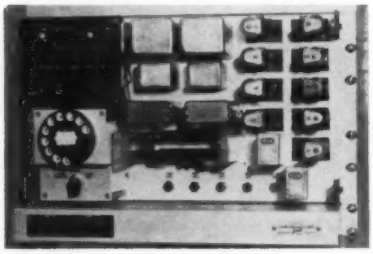
FWA batteries are equipped with heavy, lead-plated intercell connectors, minimizing voltage drop, Exide says.

They are supplied either charged and filled with electrolyte, or dry-charged. Request NP1134.

•

CONTROL TERMINAL—A miniaturized and fully-transistorized control terminal has been designed by Lenkurt Electric Co. for control and supervision of manual mobile telephone systems.

The L2 control terminal, which provides the transition between the telephone plant and the radio transmission



medium, is incorporated in its new Mobiltel manual systems, Lenkurt reports.

Two-tone selective signaling, compatible with existing nationwide mobile telephone service, is said to be used for calling mobile and fixed mobile stations. The L2 provides local or remote control of the base station transmitter and full volume reradiation of received signals for mobile-to-mobile operation.

It uses printed wiring for electronic switches and oscillators. The company says an optional AGAMP (automatic gain-adjusting amplifier) automatically compensates for differences in levels re-

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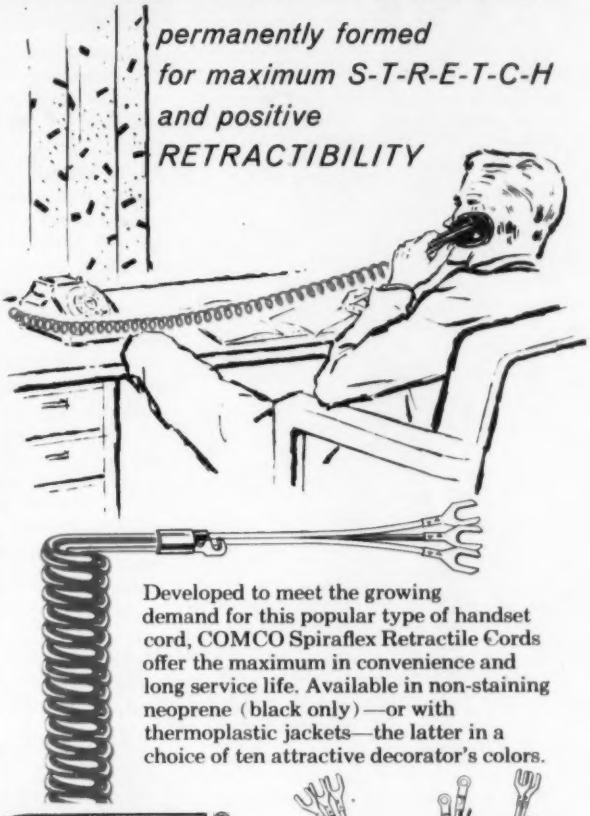

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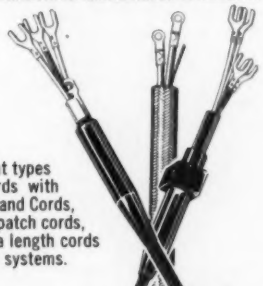

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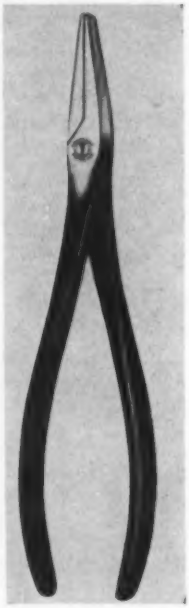
ceived at the terminal from distant and local land telephones.

Because of miniaturization techniques the terminal is a fraction of the size of previously available equipment, Lenkurt states. The basic element of the L2 requires only 10½ inches of vertical space on a standard telephone rack.

It may be used with either 48 volts dc or 115 volts ac. Request NP1135.

•

DUCK BILL PLIER—A new, long-nose duck bill plier designed to reach into confined places, has been developed by Mathias Klein & Sons.



It is available with the tips knurled or plain. Catalog No. 315-8 with knurl, length, 8 inches; Catalog No. 312-8 without knurl, length, 8 inches. Request NP1136.

•

GEAR-DRAULIC TRENCHER—A new model Gear-Draulic trencher for International Harvester 340 and 460 utility tractors has been announced by Auburn Machine Works, Inc.

The trencher will trench at widths from 6 to 14 inches and at depths to 6 feet. It reputedly will dig up to 800 feet of trench per hour.

It is described as having a unique forward propulsion drive utilizing a specially installed power-take-off that transfers power from the tractor through a combination variable hydraulic drive and speed reducer, to a geared spacer that, in turn, returns the power back into the tractor's power train at a "creep" speed. This is said to actually convert the tractor's speeds from miles

per hour to feet per hour for more efficient digging. It can be engaged or disengaged to permit the conventional tractor drive to operate at regular speeds.

The variable hydraulic drive, according to Auburn, automatically adjusts the forward speed to intermittently changing soil conditions for uninterrupted smooth trenching.

The unit is said to feature a non-clogging digging ladder with alternate right and left cutting teeth that cut the trench and lift the dirt to ground level where augers convey it to both sides of the trench.

Interchangeable digging chains and booms are available to accommodate various widths and depths of trenches desired. Special "Pent-A-Bits" are also available for use in rock, shale, and frozen ground. Request NP1137.

•

POTENTIOMETRIC VOLTMETER—Development of a new direct-current measurement device, the D-C Potentiometric voltmeter, is announced by John Brooks, president of The Siegler Corp.

In use on an experimental basis for the past year, the Hallamore potentiometric voltmeter has reduced by more than 50 per cent, errors in microvolt determination on such projects as the Martin Co.'s titan missile data instrumentation system, Mr. Brooks said.

The new unit is considered by the company to have the highest resolution capacity of any dc measurement device now available for field use. Range of the unit is from zero to 10 vdc on either polarity with an accuracy of plus or minus 0.025 per cent plus 3 microvolts. The unit has a readout facility of six decade switch dials having a resolution of plus or minus 10 microvolts. Utilizing the paned galvanometer, the resolution extends to the sub-microvolt region. Stability of reference supply is listed at 0.005 per cent for line voltages varying from 107 to 127 v ac.

Brooks listed as one of the features of the new Hallamore development its ability to maintain accuracy standards in microvolt ranges while being operated as a portable unit, unaffected by humidity or temperature under normal conditions.

In addition to providing calibration accuracy of dc microvolts, the potentiometric voltmeter also may be used as a null potentiometer, as a quasi-deflection potentiometer or, if desired, according to Brooks, the galvanometer may be electrically disconnected from the unit and used as a separate facility.

The unit is designed to be used either as a portable set or for rack-mounted installations. The panel is 19 inches wide and 8¾ inches high and the chassis is 11 inches in depth.

Particularly adapted to transducer calibration, the Hallamore potentiometric voltmeter played a major role in data acquisition on the Navy's Polaris missile development program, Brooks said. Units have been produced for the Naval Ordnance Test Station, Pasadena, Cal. and for the Martin Co., Denver, Colo. Request NP1138.

Lone Star Chapter ITPA Holds Caddo Lake Meet

The Lone Star chapter of the Independent Telephone Pioneer Association held a meeting at the Flying Fish Lodge on Caddo Lake in east Texas, June 19 through June 21. Included were the family and friends of the active members. Over 70 persons attended.

The group spent the weekend relaxing at the lake, playing bridge, fishing and swimming.

A brief business session was held.

Mrs. Winnie Burnett of Brownwood, president of the group, presided at the meeting.

Dee Cole of Greenville, owner of the Quinlan Telephone Co., and first vice president of the Texas chapter, was in charge of arrangements. Arrangements are now being made for another similar meeting in the central part of Texas, early this fall.

The Red Cross Needs People

Because the work of the American Red Cross is done by volunteers, the help of many people, with many different skills and abilities is constantly needed. The Red Cross is now calling for volunteers to give some spare time to help the unfortunate.

SIZING UP YOUR FORCE

(Continued from page 23)

What we have just done is to establish a yardstick for measuring work in our office.

Now let us follow through the steps necessary in scheduling your force.

(a) If you will refer to *Fig. 5*, you will find a form for computing hourly operator requirements.

In Column 2, enter the number of half-hourly calls opposite the half hour in which they were handled.

At the top of Column 3, enter the "coefficient" (traffic units per call).

Multiply Column 2 by the "coefficient" and enter the resulting units in Column 3. This is the number of traffic units per half hour.

(b) Next refer to *Fig. 4* and read the number of units into the table. The figure at the right will be the number of operators required, which should be entered in Column 4 of *Fig. 5*.

(c) The final step is to draw operator tricks to match the requirements.

Along the top of a form similar to the last attachment, enter the operator requirements—then below, draw in the tricks.

You will need to allow time for reliefs. This, then, is your schedule of operator hours.

ITEM No 3. *The data we have collected can also be used for engineering purposes.*

The method for determining the number of switchboard positions required is arrived at quite simply.

(a) First, find out what per cent of the calls are handled in the busiest hour. This generally will be at a level of about 10 per cent.

Next, determine the average number of calls handled per business day—or your estimate of what is to be handled per business day during the busiest month of the year. In most areas, the busiest month is December.

Let us assume that in this office of 6,800 calls a day, we expect to handle 7,500 calls a day in December, 1961.

(b) Now multiply the average calls per day by the coefficient to obtain traffic units per day. That would be 7,500 x 2, or 15,000 units per day.

(c) Then, having the traffic units, multiply these by the per cent busy hour. The number of traffic units per busy hour is 1,500.

(d) The final arithmetical step is to divide the busy-hour units by the traffic units per position for the size of your switchboard as shown in *Fig. 3*. In our example this would be 1,500 divided by 205, or a requirement of 7.3 positions in December, 1961.

Therein we have the use of this method applied to engineering purposes.

From what we have just developed, I am sure you can appreciate that this method, although not as exact as methods commonly used by larger companies, produces results accurate enough to care for the needs of smaller offices. This has been done without the necessity for complicated and time-consuming detailed peg counts.

This suggested study may be made several times a year, depending upon the likelihood of a change in composition of traffic such as a higher proportion of toll at a manual switchboard, or a change in method of operation or changes in the operating practice. Any

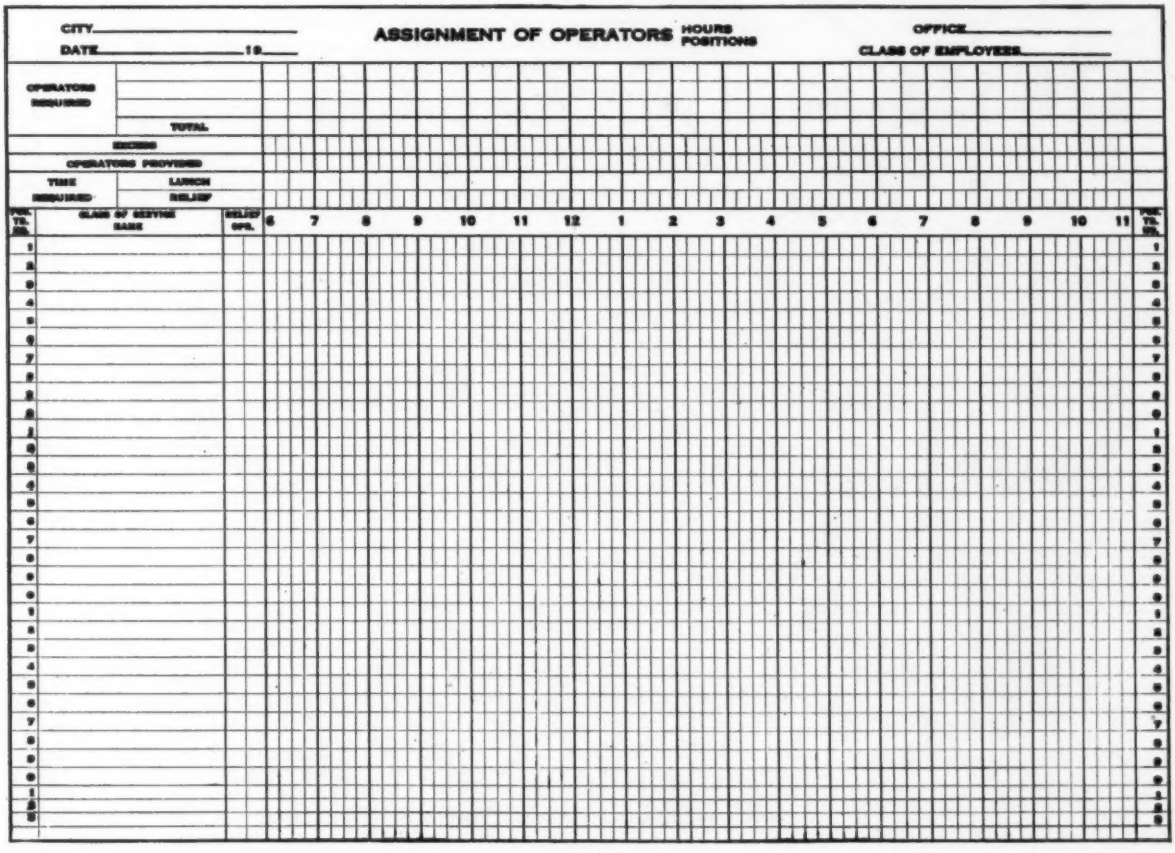


Fig. 6

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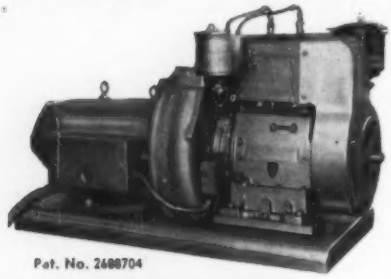

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items affecting operator work time per call will necessitate taking a new study under this method very much the same that operator requirements are affected under the historical procedures for peg counting.

I hope that I may have given you a few ideas on a rather broad subject. When you come right down to it, "Sizing Up Your Force" is a job that challenges the ingenuity in all of us.

APPENDIX I

Method of Counting Calls and Computing Traffic Units at Small Offices

I. *How to make the study.*

(A) The chief operator will maintain a half hourly chart over, say a three day period from 7 a.m. to 10 p.m. on which she will enter the number of people (operators) actually required to handle the traffic. (See *Fig. 1*).

Note: You will need to be completely honest with yourself about this, otherwise, the results of the study will be valueless. For example, if there are four operators on the board and you can see that only three are needed, put down three. On the other hand if there are three and they are having difficulty keeping up with the traffic, put down four.

(B) A count of calls handled during the same three days from 7 a.m. to 10 p.m. will be taken half hourly. (See *Fig. 2*).

(1) If the office handles local manual calls primarily, the count will be made of originating manual calls only.

(2) If the office handles toll calls primarily the count will be made of out toll calls only.

(3) If local and toll are handled on separate positions and the force handling each is approximately equal, a count of each will be made of both (1) and (2).

(C) When the counts in "A" and "B" above are completed, the results will be summarized as follows:

(1) An average will be taken of the operator hours required for the three days, both by hours and for the total day (total hours).

(2) An average will be taken of the calls (as described under "B") both by hours and for the total day.

(3) Divide the average total day calls (2) by the average total day hours (1). The result will be the average calls handled per operator hour.

(4) Refer to "Table of Position Loads by Size of Switchboard" (*Fig. 3*). Select the line under "Positions" corresponding to size of your switchboard. Read in the column opposite it the number of traffic units per position that can be carried at a switchboard of the size of your office.

Example: A switchboard of five positions can handle 195 traffic units.

(5) Divide the figure obtained in (4) by that obtained in (3). The resulting figure will be the average traffic units per call in your office, commonly called a "coefficient." This is the end-result of the study.

II. *What the foregoing study accomplishes and how the results are used.*

You now have a "yardstick" for measuring the work of your office. You can accurately schedule your force and determine the number of switchboard positions you require for engineering purposes. Here is how it is done: First, the number of operators required:

(A) On a form similar to that in *Fig. 5*, enter the number of half-hourly calls in Column 2, opposite the half hour in which the calls were filed. At the top of Column 3, enter the "coefficient" (traffic units per call). Multiply Column 2 by the "coefficient" and enter the resulting units in Column 3. This is the number of traffic units per half hour.

(B) Next refer to *Fig. 4* and read the number of units into the table. The figure at the right will be the number of operators required which should then be entered in Column 4 in *Fig. 5*.

(C) Along the top of a form similar to that in *Fig. 6*, enter the operator requirements by half hours and below draw in operator tricks to match the requirements. You will need to allow time for reliefs too. This then is your schedule of operator hours.

III. It is quite simple to determine for engineering purposes, the number of switchboard positions you need in your office.

(A) First, find out what per cent of the calls are handled during the *busiest* hour (usually 10 per cent). Next, determine the average number of calls *per business day* handled—or proposed to be handled—during the busiest month of the year (usually December).

(B) Multiply the average calls per day by the coefficient to obtain traffic units per day.

(C) Then multiply the traffic units by the per cent busy hour. The result will be the number of traffic units busy hour. The number of positions required may then be calculated by dividing the busy hour units by the traffic units per position for the size of your switchboard *(Fig. 3)*.

The foregoing method of force adjustment and determining position requirements while not as exact as would result from the use of methods common to the larger companies should produce results accurate enough for the needs of the smaller offices without the need for complicated and time consuming detailed peg counts.

The study suggested above may be made two, three or even four times a year depending upon the likelihood of a change in the character of the traffic, i.e., the installation of direct dial circuits in place of ringdown, a change in operating practice as for example, discontinuance of subsequent attempts on certain toll calls, etc.

Monthly counts of calls should be made to determine the volume of business and these need not be accompanied by the operator load study described in (A). They should be converted into traffic units, however, by applying the coefficient. The total day *load* in units per employe-hour should be computed for check purposes by dividing the total day units by the total day employe hours.

PENNSYLVANIA CONVENTION

(Continued from page 36)

any country of the world where labor has achieved political influence, this has led inevitably to the establishment of a more or less socialistic system. However, what our wonderful friends in American labor should know is that socialism if once achieved, is just as dangerous, detrimental and obnoxious to labor as it is for business.

"In a socialistic economy, it is not only business which becomes one arm of the government, but labor becomes the other by playing the role of a law enforcing agency of labor discipline.

"If once labor becomes the arm of the government, what will become of the workers right to strike, or to ask for more wages, more fringe benefits, more paid vacations, more hospitalization insurance—and what will become of the important positions of our labor leaders in such a socialized economy?"

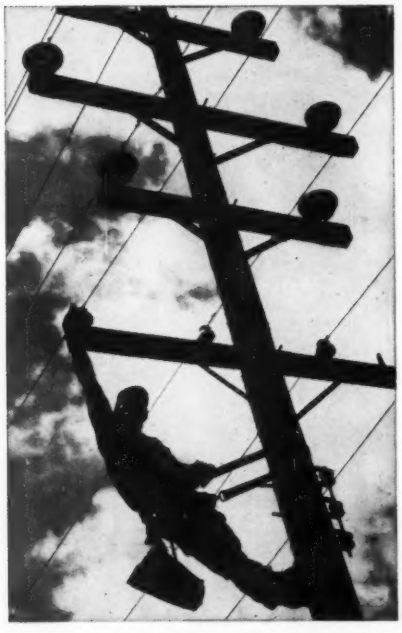
Dr. Nyaradi said that to maintain our free enterprise system, the American people must increase their knowledge and appreciation of it. It is appalling, he remarked, how little Americans know of the workings of their system. He asked:

"Why don't the American people know and appreciate the free enterprise system? Because we—in our American educational system—simply do not give them the necessary information. We teach, of course—and rightly so—American government and American history; but I ask you: isn't our free enterprise system just as important a part of our daily American way of life as our history or our government? . . .

"A recent survey of the National Education Association has shown that 75 per cent of our American public school teachers didn't have one single basic course in American economic principles during their own college education. How will they—these wonderful teachers—be able to teach American economics in our high schools under the heading of social sciences?"

Dr. Nyaradi also stated: "If free enterprise wants to survive—and its survival is closely linked with the future of our nation—then it has to be-

How can you string telephone lines faster?



Use USS Tiger Brand Amertel 195

Because the high-tensile characteristics of Amertel 195 make possible longer spans than other telephone wires, work is speeded up. There are fewer holes to dig, fewer poles to set, less hardware to install. Mile after mile, lines strung with this bonus wire go up faster—more economically.

The use of USS Amertel 195 pays off in other ways:

- Amertel 195 has extra low resistivity, resulting in better voice transmission at relatively high frequencies.
- Amertel 195 is easy and economical to string over rivers and gullies.
- Severe weather conditions will not damage it. Heavy ice may weight it down, but will not break it.
- Existing rural power poles may be used to string telephone lines without need for additional supporting poles.

For more information, write to American Steel & Wire, Dept. 9182, Rockefeller Bldg., Cleveland 13, Ohio. We'll gladly send you our new, free booklet on Tiger Brand Amertel 195.

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Columbia-Geneva Steel Division, San Francisco, Pacific Coast Distributors • Tennessee Coa l& Iron Division, Fairfield, Ala., Southern Distributors
United States Steel Export Company, Distributors Abroad

Now Ready!

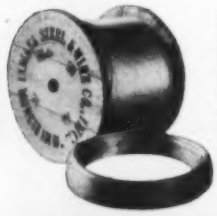
Sag and Tension Data For Strand When Supporting Telephone Cable

WRITE FOR THIS NEW MANUAL!

Those who design, build and maintain aerial telephone cable lines will find the technical information in this manual both pertinent and useful.

The sag and tension data cover three sizes of "Utilities Grade" strand when used as messenger to support plastic-sheath or lead-sheath cable. These data will be helpful in determining the size of strand to be used for a particular weight of cable and span length, and in answering other questions relating to design problems.

This Manual will be mailed without obligation to all interested telephone men. Ask for Manual No. MS-58.



Crapo Galvanized Steel Strand (for both messenger and guys) is available in all standard sizes and grades and in Class A, B and C coatings.

INDIANA

STEEL & WIRE CO., INC.

Muncie, Indiana

come strongly and firmly 'pro-freedom,' 'pro-American' and 'pro-free enterprise' as it was strong until now in its negative attitude, merely opposing trends which it disliked.

"This is about the last opportunity for business, because today's education —within and without our schools—*is* tomorrow's business."

The following were re-elected directors: B. V. Cobler of Knox; W. M. Gottschall of Lansford; G. M. Keefer of Gibsonia; H. G. Payne of Export; G. A. Ruhl of Lewisburg; K. B. Schotte of Kittanning, and R. B. Scott of Waynesburg.

Also, A. N. Seward of Meadville; L. F. Shepherd of Erie; H. Y. Smith of Columbia; A. J. Sordoni Jr. of Dallas; J. K. Stotzfus of Birdsboro; J. H. Swope; and L. R. Thurston of Harrisburg.

The directors elected the following officers: President, Mr. Cobler; vice presidents, Mr. Gottschall and Mr. Keefer; treasurer, Mr. Smith; executive vice president, Albert C. Herbert of Harrisburg, and secretary, M. Ethel Cunningham.

MOBILE COMMUNICATION

(Concluded from page 44)

nels and only four teletypewriter channels.

The first of these communications centrals has been assigned to the Strategic Army Corps unit, the 519th Signal Company at Ft. Gordon, Ga., for intensive training of the operating team.

The AN/TSC-16 was built for the Signal Corps by Adler Electronics, Inc., of New Rochelle, N. Y., based on specifications prepared by the U. S. Army Signal Engineering Agency. The cost of each unit is about a half million dollars. Additional units of this type will be constructed, as required, for the Army Signal Corps in the future.

To obtain the versatile quick-reacting capabilities on an expedited basis, the Army and industry produced the communications central largely from existing components and equipment. More than 35 equipment manufacturers contributed to the new air-ground transportable system. This method of development and fabrication represents a substantial savings in total cost, since it eliminates time-consuming and expensive basic design and development phases.

Missouri Chapter ITPA Holds Annual Barbecue

The annual barbecue of the Theodore Gary chapter, of the Independent Telephone Pioneers Association, was held

Save Money in the Long Run

NATCO CLAY CONDUIT, economical to install and maintain, is the low cost way to give Underground Telephone Cables permanent protection. Available in a full line of shapes.

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THE COUNTDOWN IS CONTINUING...

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get ready for TIF*
blast off!

NORTH ELECTRIC COMPANY

GALION, OHIO

NORTH

75TH AND GREATEST YEAR

* another Telephone Industry First

at Busch Lake south of Jefferson City, Mo., on June 20.

A crowd of 137 members, families and friends was in attendance. Members from California, Kansas and Illinois came back for a visit, and all points of Missouri were represented.

This was the first chapter meeting since election of the new officers in May. Berney Simner of St. Louis is president and Miss Katharine A. Bauer of Jefferson City, secretary-treasurer.

The committee in charge of arrangements for the barbecue consisted of Foster B. McHenry, M. S. Bodine and George Fitzgerald of Jefferson City.

The 1960 barbecue will be held at the same place on June 25.

Dresslar New President of Southern Nevada Company

Frank A. Dresslar Sr. will become president, chairman of the board, and a director of Southern Nevada Telephone Co., Las Vegas, effective Sept. 1, according to an announcement by the

F. A. DRESSLAR SR.

company. This position has been vacant since the death of Allye Lawson on Apr. 13, 1959.

Mr. Dresslar brings to the Southern Nevada company experience in nearly every phase of the telephone business. He spent 40 years with Pacific Telephone & Telegraph Co., serving as a vice president for almost 18 years in various executive capacities in the PT&T company's headquarters in San Francisco as well as in Oregon.

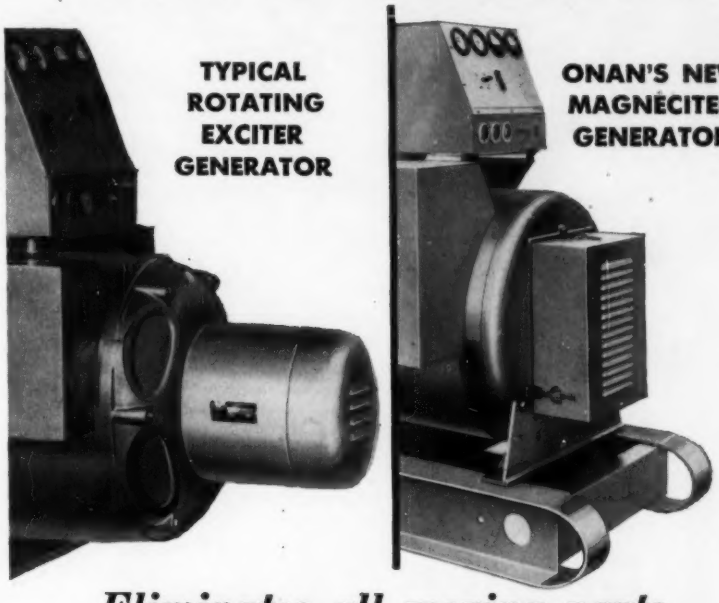
For the past 10 years, he has been vice president and general manager in charge of over-all operations for the state of Oregon.

The Zestful "Present"

"Enjoy the present day, trusting very little to the morrow."—HORACE.

THE "NEW LOOK" IN GENERATOR DESIGN

on large Onan gasoline and diesel plants



Eliminates all moving parts in exciter and voltage regulator

Steps up performance in primary and emergency standby installations

- ✓ ***FASTER VOLTAGE RECOVERY***—Rated voltage is restored within one second after load is applied or removed, compared with 5 seconds for a rotating exciter generator.
- ✓ ***LESS VOLTAGE FLUCTUATION***—Voltage fluctuation with load changes is less than half that of standard-type generators.
- ✓ ***GREATER RELIABILITY***—New design eliminates hundreds of electrical connections, the commutator and its brush rig, and many other "break down" points.
- ✓ ***FEWER ADJUSTMENTS***—No extra sensitive adjustments necessary. Regulator has no delicate multiple contact points.
- ✓ ***EASIER SERVICING***—All exciter and regulator components are easily accessible. No dismantling necessary.

New Magneciter generators are now standard equipment on all Onan Electric Plants of 100, 125, 150, 175 and 200KW, as well as on many smaller sizes. A choice of Diesel or gasoline engine power is available on most Magneciter-equipped models. Complete specifications on any or all Onan units will be sent on request.

Find Us Fast In The Yellow Pages

Onan builds a complete line. Air-cooled gasoline models from 500 to 10,000 watts; air-cooled Diesels in 3 and 5KW; water-cooled gasoline models from 10 to 150 KW; water-cooled Diesels, 10 to 200KW. Also separate generators, D.C. plants, and accessories.

Call the Onan distributor listed in your telephone book or write directly to us.

D. W. ONAN & SONS INC.

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Onan ELECTRIC PLANTS

For faster, better tree trimming with less fatigue

Chance *Power* Pruners

These air-powered pruners make a clean one-stroke slice through green branches up to 2 inches in diameter. No splitting or chewing of branches. Jaws re-open automatically after each cut. These lightweight, well balanced tools are easy to use—require no experience to operate from "buckets," ladders, or in trees.

Chance Power Pruners, Guy Strand Cutters and Communications Cable Cutters are air powered. They operate from many power sources — compressors of any type or standard cylinders of dry nitrogen. Insulated and non-insulated models are available.

A. B. CHANCE COMPANY

CENTRALIA, MISSOURI

A. B. Chance Co. of Canada, Ltd., Toronto

CT59-14

IN THE NATION'S CAPITAL

Concluded from page 19

Court of Indiana, however, has upheld the decision of the Indiana commission in allowing the Public Service Co. of Indiana to use "normalized taxes." The court's opinion described and approved the commission's order in the following language:

"The purpose of Congress in enacting the provision of Internal Revenue Code with which we are concerned was to encourage expansion and construction in the industry. It was recognized that the accelerated amortization provision was not in harmony with the actual depreciation rate. Since the allowance for depreciation will be eaten up, so to speak, during five years, there will be no deductions for depreciation in the years thereafter for tax purposes, with the result that taxable income will be higher. The ratepayers thereafter would bear more than their share of taxes because of the abnormal amount of depreciation taken in the first five years. Unless deferred federal income taxes are normalized, the commission could not determine with any accuracy the amount of net operating income which would constitute a fair return. In cases where the point raised has been before the courts, the decisions have been adverse to appellants."

The Indiana court then cited decisions of the high courts of Virginia and New Hampshire as well as the U. S. Circuit Court of Appeals of the District of Columbia.

Attrition and Regulatory Lag

Another recent high court opinion in a public utility rate case is worthy of passing attention because it deals with the complicated problem of allowing for inflation, attrition, and regulatory lag. This case comes to us from the Maryland Court of Appeals, which reversed a lower court judge who said that the Baltimore Gas & Electric Co. ought to refund to its customers about 2 million dollars of a rate increase granted by the Maryland commission last summer. But the higher court upheld the Maryland commission which had permitted the utility to increase its rates about $4,683,000.

The gist of the dispute had to do with a controversial item of 32.2 million dollars worth of planned plant expansion. The commission took the view that, since the company's money was actually tied up in this program, which would eventually be needed in actual operations, the company was entitled to a return on the same. But, the lower court judge used a very narrow construction of the well-known phrase of "used and useful" (which appears in many state regulatory laws) and ordered the whole amount to be thrown out of the rate base. The lower court judge felt that, until the plant expansion was actually in use, it could not be considered "used and useful." But, the Maryland Court of Appeals felt otherwise, stating:

"The meaning and the concept of the words 'used and useful in rendering service to the public' have been held to have a certain elasticity since the phrase first came into use. Although moneys used to construct additions to plant do not actually and immediately render service to the public, interest on such moneys during the period of construction long has been capitalized and added to the rate base with approval of the courts and regulatory commissions. . . .

"Conditions in recent years have persuaded regulatory agencies throughout the country to include in the rate base, as used and useful in the public service, property estimated to be in service by the end of the test year. . . . The conditions that have prompted this practice are inflation, attrition and regulatory lag. . . . Since the end of the last World War, rates designed to give a certain return did so only for a short period and then became inadequate as rising prices, wages and taxes took their toll."

The commission gave the company authority to boost rates sufficiently to gain an over-all return of 6.25 per cent on its rate base.

Fusco Sworn In As Head Of New Jersey PUC Board

Ralph L. Fusco took the oath of office on June 24 as president of the New Jersey Board of Public Utility Commissioners.

Mr. Fusco succeeds Edward J. Hart who has resigned as president but remains a member of the three-man commission.

Fusco, an attorney, will receive $20,000 a year in his new post, one of New Jersey cabinet rank.

Soon Swiss to Register Millionth Subscriber

It is expected that Switzerland will soon register her millionth telephone subscriber.

At about the same time, she will attain the figure of 1,500,000 telephone stations in service.

The population of Switzerland at the present time, is 5.2 million.

Ask Party Line Law in Wis.

Gov. Gaylord Nelson has submitted a proposal to the Wisconsin legislature for a fine of up to $500 for refusing to surrender a party line in an emergency.

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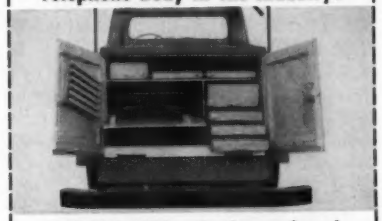
SERVES THE TELEPHONE INDUSTRY!

Stahl Side Boxes — convert pick-ups into efficient Service Trucks.

Stahl TMI-76 — Lowest-cost Telephone Body in the Industry!



Stahl TMI-76 — Engineered and built to rigid specifications.

Stahl Cable Splicer Body — built for longest, hardest SERVICE!

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Check product in which you are particularly interested.

Stahl Metal Products, Inc.

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Bradbury of Southern Bell Completes Nearly 48 Years

J. G. Bradbury, executive vice president of Southern Bell Telephone & Telegraph Co., retired June 30, after nearly 48 years of service.

Mr. Bradbury is widely-known throughout the South and the nation not only as a telephone executive, but as an outstanding civic leader. He will continue to be active in civic affairs.

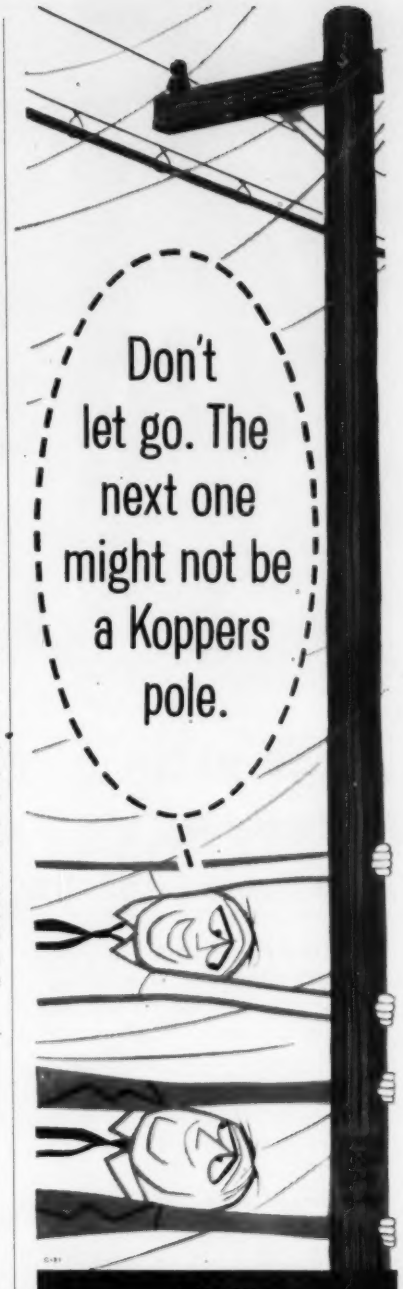
A native of Hendersonville, Tenn., Mr. Bradbury began his telephone career in Nashville in 1911.

When he began his telephone career as a clerk, there were only 355,000 telephones in the area now served by Southern Bell. Today, as he retires, Southern Bell serves nearly 6,500,000 telephones in nine states.

As a Southern Bell official, Mr. Bradbury planned and directed much of the expansion which brought more telephones. He directed the company's activities as operating vice president during the post-World War II years when Southern Bell's network of telephones expanded three-fold.

During his career, Mr. Bradbury filled assignments in four Southern states. He began at Nashville after attending Peabody College, then transferred to Atlanta. He later filled assignments in Nashville again, and in Charlotte, N. C. He was named general plant engineer in Atlanta in 1934, and was later appointed Florida plant superintendent. In 1938, he was named general plant manager in Atlanta, and became operating vice president in 1943. He was elected executive vice president in March, 1956.

Roy A. Worley, general equipment engineer of the General Telephone Co. of Ohio, recently retired, on completion of 41 years service in telephony.



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for rail or truck deliveries of POLES and CROSSARMS from plants and delivery yards

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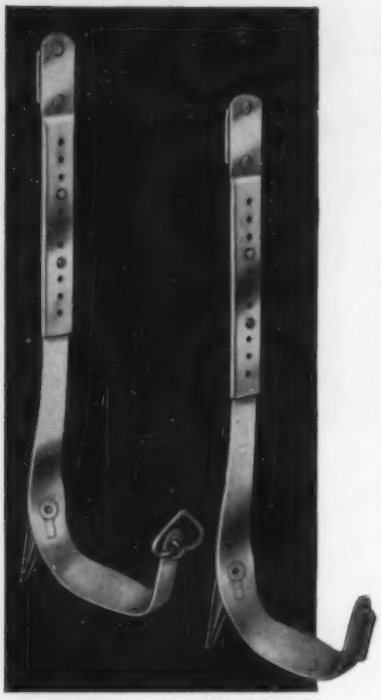

No. 1958-AR

NEW KLEIN Replaceable Gaff Adjustable Climbers

These new Klein Replaceable Gaff Climbers assure maximum quality and safety. We recommend leg irons be replaced after three sets of gaffs have been used.

The easily replaceable gaff is held in position by a self-locking screw. Full impact is absorbed by the gaff and leg iron. No load is transmitted to the screw.

Adjustable to 14½, 15, 15½, 16, 16½, 17, 17½, 18, 18½ and 19 inches. Made in matched pairs, right and left. Available with triangular ring at ankle or riveted ankle loop. Aluminum finish. Every climber individually tested.

WRITE FOR BULLETIN 559

Bulletin 559, giving full information on Klein Replaceable Gaff Adjustable Climbers, will be sent on request.

ASK YOUR SUPPLIER

Foreign Distributor: International Standard Electric Corp., New York.

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Norris Retires from GT&E, Serves 38 Years in Industry

Frederic E. Norris, vice president—planning and development of General Telephone & Electronics Corp. is scheduled to retire in July after 38 years of service, according to an announcement by Donald C. Power, chairman and chief executive officer. Mr. Norris requested retirement in order to pursue personal interests.

Born in Chicago, but reared in Kentucky, Mr. Norris' career started with Automatic Electric Co., a division of General Telephone, and he has stayed in the telephone business ever since. His positions have always been with General or a subsidiary except for several years when he was "on loan" to Western Electric.

His first job at Automatic Electric in 1919 was in the production of automatic equipment, and later in installing the equipment.

After a year, he was sent to Western Electric "on loan" to install dial equipment. He served Western in Hartford, Conn., Syracuse, N. Y.; Portland, Ore., and Los Angeles.

A little tired of the traveling, Mr. Norris accepted a job with AT&T's long lines department, expecting to be based in Chicago.

But, after two months, an emergency call sent him to Bloomington, Ill., to repair damage to service; from there, another emergency rushed him to Nebraska, in the middle of winter.

Perhaps it was the cold that made him accept an offer from Southern California Telephone Co. Mr. Norris landed in Los Angeles to take up his new job, only to find that a change in policy made the job unavailable, but another telephone company, an Independent, now General Telephone Co. of California, sought him out as an apparatus installer.

With the Santa Monica company, Mr. Norris advanced rapidly, becoming maintenance supervisor, equipment engineer, traffic engineer, general plant superintendent and chief engineer, then vice president—operations and a director.

He stayed in California until 1947, when he was transferred to New York, to system headquarters, but during that time he had accomplished a great many things in organizing and training the staffs from small-town isolated companies to operations that suited the metropolitan area into which his section of California began to grow.

Among his outstanding accomplishments was his part in moving two large complex automatic switchboards from one building to another, keeping the boards in service all the time. This was the first time such a move had been accomplished.

During the 1933 Long Beach earthquake, Mr. Norris was one of the leaders in directing the reconstruction and rehabilitation work in "the roughest 10 days of my life."

In 1947, Mr. Norris was called to New York as vice president of the General Telephone Corp. with his duties consisting mostly of helping the system companies in regard to post-war problems of government controls, engineering, etc.

He formed the system committees for working toward improved results in General Telephone's operating companies.

Retiring after 38 years of service to the telephone industry, Fred E. Norris, center, vice president — planning and development of General Telephone & Electronics Corp. gets best wishes, from, left, Don C. Power, chairman of the board and chief executive officer, and Don G. Mitchell, president.

He was elected president of the General Telephone Co. of Michigan in 1951, and reorganized its operation within three years, returning to New York and to General's headquarters in 1954, to organize the operations department. In 1957, he was made vice president, planning and development, a newly created position, to create a long range plan for system development which would bring all phases of the business into alignment.

Mr. Norris has served as a director of the United States Independent Telephone Association, and has been identified with many of its committees, frequently serving as chairman. He is also an active member of the Independent Telephone Pioneer Association and the Telephone Pioneers of America. He is a member of the AIEE and was consulted by the War Production Board.

As an industry leader in operational matters, he has addressed many groups, and has been responsible for the formation of special classes aimed at developing engineering, economic and administrative skills in the telephone industry.

Boveri Named Controller, General of California

Charles E. Boveri, presently controller for General Telephone Co. of Mich., will be transferred as controller to General Telephone Co. of Calif., it was announced on June 25 by Donald C. Power, chairman and chief executive officer.

C. E. BOVERI

Mr. Boveri succeeds to the position formerly held by Frank A. Peter who has been elected vice president-finance of the California company.

The new controller received his B.S. degree from Purdue University, and

NUMBER TS-23 - *Designed for carrier circuit use on all "point" type transposition hardware and at intervening non-transposition poles.*

HEMINGRAY INSULATORS

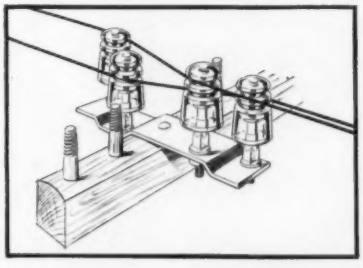
Easily and Economically Installed

Hemingray Glass Insulators stand up under severe conditions, do not deteriorate, provide the service you need to assure continuous operation of communication lines. The dependability of Hemingray Insulators as proved by years of fine performance is one of the reasons behind their world-wide acceptance.

Hemingray has pioneered many insulator developments to keep pace with requirements, improve communication systems, assure you a dependable source of supply.

An up to date distribution system makes Hemingray Insulators available when you want them and where you need them.

Hemingray Glass Insulators are a product of Kimble Glass Company, subsidiary of Owens-Illinois, Toledo 1, Ohio.



This carrier circuit transposition developed by the Bell System takes only the crossarm width of one conventional pin.

World standard for quality Since 1870

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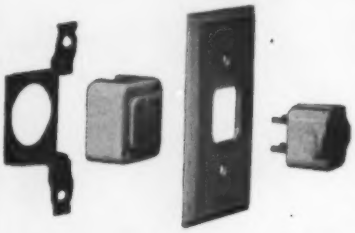
WHAT'S NEW AT SUTTLE

TOP VALUES



S.E. 44 ($.28 ea) S.E. 404 ($1.30 ea) S.E. 198 ($.30 ea) S.E. 283 ($1.00 ea)

Standard Plug and Jack Assembly: Helps sell extensions. Standard flush or non-flush type, 4-prong wall mounting plug and jack assemblies are now manufactured by SUTTLE. Plug and jack bodies made of high-impact, high-density styrene. Specify brown or ivory when ordering. Available from all distributors.

S.E. 44A ($.46 ea)

S.E. 101D ($.55 ea) S.E. 101C ($.40 ea) S.E. 101A ($.25 ea)

10-Terminal Connecting Block and Non-Shorting Plastic Covers: Three sizes of non-shorting plastic covers are available to house one to four standard S.E. 44A 10-terminal connecting blocks. Only SUTTLE manufactures these high dielectric plastic covers—in brown or ivory.

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joined General Telephone Co. of Ind.

In May, 1955, he was transferred to General Telephone Co. of Mich. as assistant controller; and in 1958 was elected controller of that company.

James L. Johnson has been elected controller of the General Telephone Co. of Mich., succeeding Mr. Boveri. Mr. Johnson formerly was assistant controller for General Telephone Co. of the Southwest, San Angelo, Tex.

Mr. Johnson joined the General Telephone System in March, 1949, after graduating from Texas Tech. He became assistant controller in October, 1953.

Austrian Post & Telegraph Plans Expanded Facilities

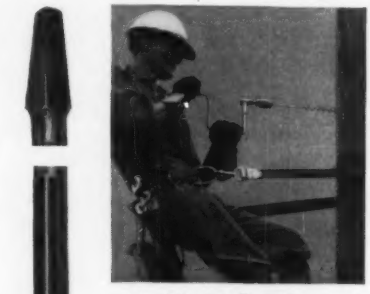
Conversion of the telephone from manual to dial operation and extension of long distance dial service within Austria is considered one of the principal tasks of the Austrian Post & Telegraph Administration, and it is hoped this may be accomplished within the next five years, the *Foreign Commerce Weekly* reported on June 15.

As of Dec. 31, 1958, there were 369,626 main telephone stations in Austria, the annual report of the Austrian Post & Telegraph Administration stated.

Ten per cent of these telephones are manually operated; and 90 per cent are dial. Of the dial-operated telephones, 228,251 are connected into the long distance dialing service, which means that 62 per cent of all the main telephone stations in the country can be connected without the aid of a switchboard.

International telephone service is now available either by wire or radio, with nearly every country in the world, including the United States.

ONE BIT FITS BOTH



1. Hand Brace

2. Electric Drill

New Irwin Adapter Shank Wood Bit

Now you can eliminate the need to stock two types of wood auger bits. Irwin's new Adapter Shank Bit fits both hand braces and power drills.

With hand braces, use the Adapter Shank Bit as it comes. Cut off taper square and the Adapter Shank, with its 6 "hex flats", chucks perfectly in power drills or hand braces, either one. No wobble, no run-out. Clean, efficient cutting action. Reduces inventory and record keeping by 50%. Saves time on the job, too. Call your distributor, or write today for complete information. Sizes 4/16" to 17/16", both solid center and single twist types.

All Irwin Adapter Shank Wood Bits are forged in one piece from special steel and heat tempered full length for longer life. Plastic coating on balanced cutting heads guarantees factory-fresh sharpness, unequalled performance. Widely used by utilities, electricians and construction workers.

IRWIN auger bits screw drivers
Wilmington, Ohio

Stromberg-Carlson Names Meeds, Winston Assistants

David Balis, manager of installation and customer service for Stromberg-Carlson's Telecommunication Division, has announced the appointment of Douglas C. Meeds as assistant manager

D. C. MEEDS

of that department and of Edward R. Winslow as assistant chief installer. Stromberg-Carlson is a division of the General Dynamics Corp.

Mr. Meeds has been assisting Mr. Balis in coordinating the department's functions for several years. His duties include the initial scheduling and assigning of installation and service personnel.

In his new position Mr. Winslow assists George H. Christiansen, chief installer, in the supervision of installation personnel. He will devote much of his time to field inspections.

Mr. Meeds began with Stromberg-Carlson in 1942 as supervisor of relay repair after serving with the Western Electric installation department. He spent some time in the inspection department, with particular attention to outgoing switchboard equipment. In 1951 he joined the installation department and was given the responsibility of handling the material requirements for all groups in the field.

Meeds was born in Theresa, N. Y., received his early education in Syracuse, and attended the Rochester Institute of Technology, where he majored in telephony and quality control.

Mr. Winslow went to Stromberg-Carlson in 1951, and worked as an installer, and later as installation foreman. In the latter capacity he was responsible for installations of XY Dial equipment in numerous cities in Florida, California and Minnesota.

Prior to joining Stromberg he was

ENGINEERS

CIRCUIT LAYOUT & TRANSMISSION

FOR ITT SERVICE DIVISION'S WHITE ALICE LONG-LINES COMMUNICATION NETWORK PROJECT IN ALASKA

The White Alice project provides for operation and maintenance of 3,000 miles of line-of-sight and tropospheric scatter microwave radio circuits in Alaska. Supervisory engineering positions now open at the project headquarters at Anchorage offer excellent reward and interesting experience to competent engineers.

CIRCUIT LAYOUT—opening for BSEE or equivalent experience, plus six years communications engineering of which three years should have been as a circuit layout engineer.

TRANSMISSION ENGINEER—opening for BSEE or equivalent, with at least six years communications (voice and telegraph) experience, of which three years should have been as a transmission engineer.

To investigate these positions, write Mr. R. W. Broglie, Technical Placement, furnishing résumé of experience.

FEDERAL ELECTRIC CORPORATION

Service Division of International Telephone and Telegraph Corporation

Paramus Industrial Park, Paramus, New Jersey

SUPERIOR
INSIDE WIRING
CABLE

- **Multiple conductors paired and fully color-coded**
- **Lightweight**
- **Plastic-insulated**

Superior's Inside Wiring Cable is economical, efficient and easy to install.

Conductors are insulated with a tough vinyl compound . . . heat and water resistant and unaffected by humidity. Has high resistance to crushing and cold flow.

Easy to terminate . . . simply strip insulation.

Cross talk is minimized due to systematic varying lays of pairs.

Special vinyl jacket provides excellent protection for all inside wiring conditions.

For details, write

SUPERIOR CABLE

SUPERIOR CABLE CORPORATION
Hickory, North Carolina

3142

associated with the New England Telephone and Telegraph Co., Lewiston, Me., as well as in New Hampshire and Massachusetts.

Winslow was born in Norway, Me., and received his early education there. He served for two years with the U. S. Navy in the Pacific Theatre.

New AE Assignments for Dr. I. Molnar, F. L. Kahn

Dr. Imre Molnar has become technical director of Automatic Electric International with headquarters in Milan, Italy, it was announced June 12. He took up his new duties in July.

DR. IMRE MOLNAR

Frederick L. Kahn, systems consulting engineer for Automatic Electric Co. at Northlake, Ill., will succeed Dr. Molnar as director of development, telephone switching systems, for General Telephone Laboratories, also at Northlake.

Dr. Molnar, who began his telephone and communications career as an apprentice and installer in Europe in 1921, recently visited the U.S.S.R. representing the American telephone and wire communications industry as one of a six-man American scientific group under the sponsorship of the Electronics Industries Association and the U. S. Department of State. The group spent a month inspecting a cross-section of Russian plants and laboratories.

Dr. Molnar began his association with Automatic Electric in Europe in 1930, the same year he received his degree in communication engineering at the University and Institute of Technology in Berlin, Germany.

He later studied at the University of Liverpool in England and, in 1937, was transferred to the home office of the organization, then located in Chicago. In 1950, Dr. Molnar received his Ph.D.

Stewart

TEST EQUIPMENT

COMMUNICATIONS UNIT Model M

- **For Inter-com Use**
- **Saves Time & Money**
- **Restores Service Faster**

Unit enables point of work communication in checking and aligning exchange equipment. Transistor powered amplifier with combination transmitter-speaker, batteries and switching. Output + 3 D B into line. — 12 D B from line provides sound output which can be heard from 20 to 30 feet. Units may be operated through carrier equipment.

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MAGNOLIA GLAYZIT
Telephone Refinisher
POLISHES

Cleans, revitalizes, preserves the surface! Dustproof—polish can't come off on cloth when dusting. Only dust comes off! Restores cabinet-maker's finish to furniture! Adds years to life of any finished surface! Supreme for telephones.

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degree in electrical engineering and statistics from Northwestern University, Evanston, Ill.

He is the holder of some 30 patents in the field of telecommunications and is the author of a five-volume treatise on "A Study of Traffic in Automatic

F. L. KAHN

Toll Telephone Systems" as well as of papers and abstracts in the field of electrical engineering.

Dr. Molnar is a member of the American Institute of Electrical Engineers and a senior member of the Institute of Radio Engineers. He is listed in "American Men of Science," "Who's Who In The Midwest" and "Who's Who In Engineering."

Frederick Kahn, who completed 35 years of service with Automatic Electric in February, began his association with the company in 1924 as an equipment engineer after arriving in this country from Berlin, Germany, in 1923.

A lifelong student of telephony, Mr. Kahn, after his education and early experience in Germany, has become a specialist in automatic switching in all of its phases and has written a number of articles in the field of his specialty.

Before promotion to his systems consulting post in 1954, Mr. Kahn held supervisory positions in systems analysis work in the company's laboratories, sales and equipment proposals, equipment engineering, cost studies and circuit adaptation and testing.

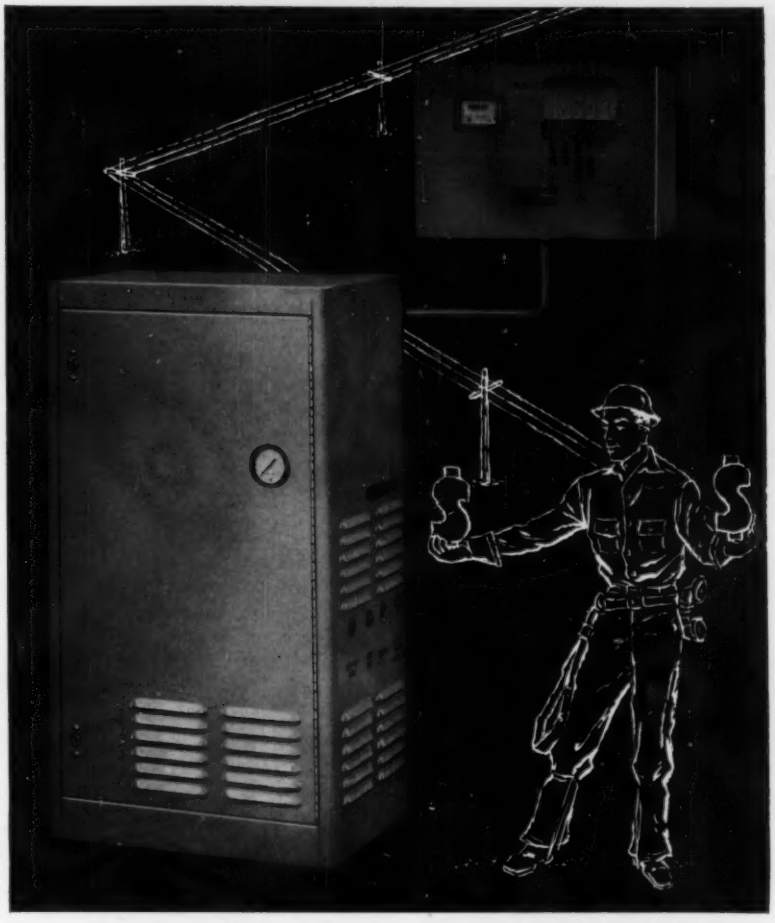
Mr. Kahn, a member of the American Institute of Electrical Engineers, is the holder of six patents on telephone switching systems improvements.

Electro-Measurements Names Ken Webber Advertising

Electro-Measurements, Inc., Portland, has named Ken Webber Advertising as its advertising agency, effective im-

PUREGAS...

A DIRECT LINE TO LOWER MAINTENANCE COSTS



PRESSURIZING CABLES WITH DRY AIR *SAVES ALL WAYS*

Records show cable maintenance costs decrease materially when lines are pressurized with PUREGAS Dry Air. Sheath breaks can be detected as they occur, allowing, in most cases, the supervisor to schedule orderly repairs during the regular working day. PUREGAS equipment automatically maintains air pressure in the sheath to keep moisture, dirt, and corrosive fumes from reaching the conductors. Even during floods, PUREGAS Dry Air equipment established records in protecting cables against water damage.

Free more maintenance dollars and extend cable life . . . Pressurize with PUREGAS. Learn how economical it is to pressurize all *cables with PUREGAS Dry Air equipment. Write today for Bulletin 110, "Why should cables be pressurized?"*

PEC

PUREGAS EQUIPMENT CORP.

578 OAK STREET

COPIAGUE, L. I., N. Y.

FOR EVERYTHING YOU NEED

Kellogg is close by with fast, dependable

Nuts, bolts, cable, terminals, batteries... you'll find everything it takes to run a telephone company under one roof at Kellogg. Eight completely stocked, conveniently located warehouses are only a phone call away. And when you call Kellogg you're talking with trained, experienced telephone men who understand your needs, know exactly what you require. For telephony's most complete source of dependable equipment, such as shown on these pages, and fast, efficient service... call your Kellogg representative.

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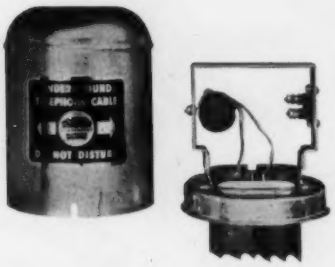
Communications Division of IT&T

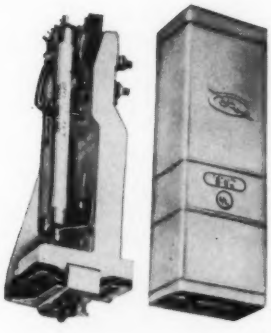
Kellogg Switchboard and Supply Company
6650 South Cicero Avenue, Chicago 38, Illinois
Communications Division of
International Telephone and Telegraph Corporation

New safety against explosion. Model EWA Exide-Tytex Batteries now feature a special explosion-control gas venting device for extra safety. Other advanced features include suspended plates, patented Silvium corrosion resistant grids, plastic jars. Exide Industrial Division, THE ELECTRIC STORAGE BATTERY COMPANY.

UNBREAKABLE METAL THERMOMETER—The Dillon Temperometer registers correct temperature of paraffin, compounds, wiping solder, impregnation wax, cable damming waxes. Rugged, lightweight, with large easy-to-read dial. Stops guesswork in heating cable materials. Range: 200-1000°F. W. C. DILLON & CO., INC.



CEECO LUG-3 Pedestal Parkway Terminals—for direct burial plastic wire and cable. Two-piece pedestals, 6' long; brackets available for pole mounting. Load one or more pairs as required, use C152 Ready Mount assemblies. CP16 assemblies available in 1, 2, 6, 12 and 16 pairs. Accessible for testing, splicing, cross connecting, subscriber distribution. Expandable; larger hoods available. COMMUNICATION EQUIPMENT & ENGINEERING COMPANY.



A Single Circuit Protector for both indoor and outdoor use. The Type 09U is equipped with Tru-Gap dischargers, carbons, 7 amp. fuses, a porcelain base, and a gasket and locking device. A product of COOK ELECTRIC COMPANY.

A Tree Guard made of thermoplastic tubing, helically slit, and cut to 3, 50, 100 or 500 foot lengths—protects drop wire from tree contacts. Guard can be spiraled on wire already in place. DETROIT MACOID CORPORATION.

For Decimonic Ringing Systems—The K-5 Subcycle supplies permanently accurate ringing frequencies and closely regulated ringing voltages. Requires little power to operate and minimum maintenance. LORAIN PRODUCTS CORPORATION.

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MINNESOTA:
6100 Excelsior Blvd., Minneapolis 16, Minn. West 9-6715

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Crapo Tangent Supports for One-Pair Parallel Rural Distribution Wire. Made of tough, springy stainless steel wire (.109" diam). Coated with neoprene. Oval-shaped spirals provide close, uniform gripping action, reduce possibility of slippage. INDIANA STEEL & WIRE COMPANY, INC.

For perfect splices, Nicopress Sleeves fit perfectly into the jaws of the Nicopress 17-2 Tool to produce a full-contact splice every time. Nicopress Sleeves and Tool are easy to use, quick, dependable. Full range of sleeve sizes for every telephone conductor. Nicopress Sleeves and Tools are products of THE NATIONAL TELEPHONE SUPPLY COMPANY.

THE COUNTDOWN IS CONTINUING...

7·6

get ready for TIF*
blast off!

NORTH ELECTRIC COMPANY
GALION, OHIO

* another Telephone Industry First

75TH AND GREATEST YEAR

mediately, according to announcement by Douglas C. Strain, president.

The electronic firm manufactures a line of instruments and components, including bridges and accessories, decade voltage dividers, decade resistors and capacitors plus their new ESIAC computer.

Mr. Strain said the appointment was another step in the long-range program for advertising, merchandising and sales promotion.

The first phase of this program was put into effect late last year with the creation of a new sales-service department staffed by engineering personnel. Now an important factor in the company's marketing activities, the new department was set up to fill customer needs for the specific application information and the technical services which only experienced engineers can provide, Mr. Strain said.

To implement services of the sales-service department, the company maintains directory listings in 51 key market areas with direct toll-free telephone service to the plant in Portland.

The first project for the new agency, Strain said, will be close liaison with the company's advertising and sales promotion department in developing other phases of the over-all program. These include increased emphasis on product literature, direct mail and the institutional aspects of the company's present advertising program.

The principal media will continue to be trade publications on an expanded space schedule commensurate with the company's steady growth, Strain said.

Cassidy Named Chicago Sales Manager for Page

John C. Cassidy has been appointed Chicago, Ill., district sales manager for the Page Steel & Wire Division, American Chain & Cable Co., Inc., according to an announcement by Joseph N. Kemple, general manager. The Chicago district covers the states of Illinois, Missouri, Kansas, Indiana, Wisconsin, and Minnesota.

J. C. CASSIDY

Prior to his promotion, Mr. Cassidy had been district sales manager of Page's Houston, Tex. territory since July 1, 1954.

Having seen service in World War II, he joined American Chain & Cable Co. in 1949 after graduation from Western Reserve University with a degree in business administration.

The Page Steel & Wire Division, with headquarters in Monessen, Pa., manufactures a diversified line of wire, fence and welding products for home and industry.

Electric Storage Battery Elects Ott, Dwyer, Cairo

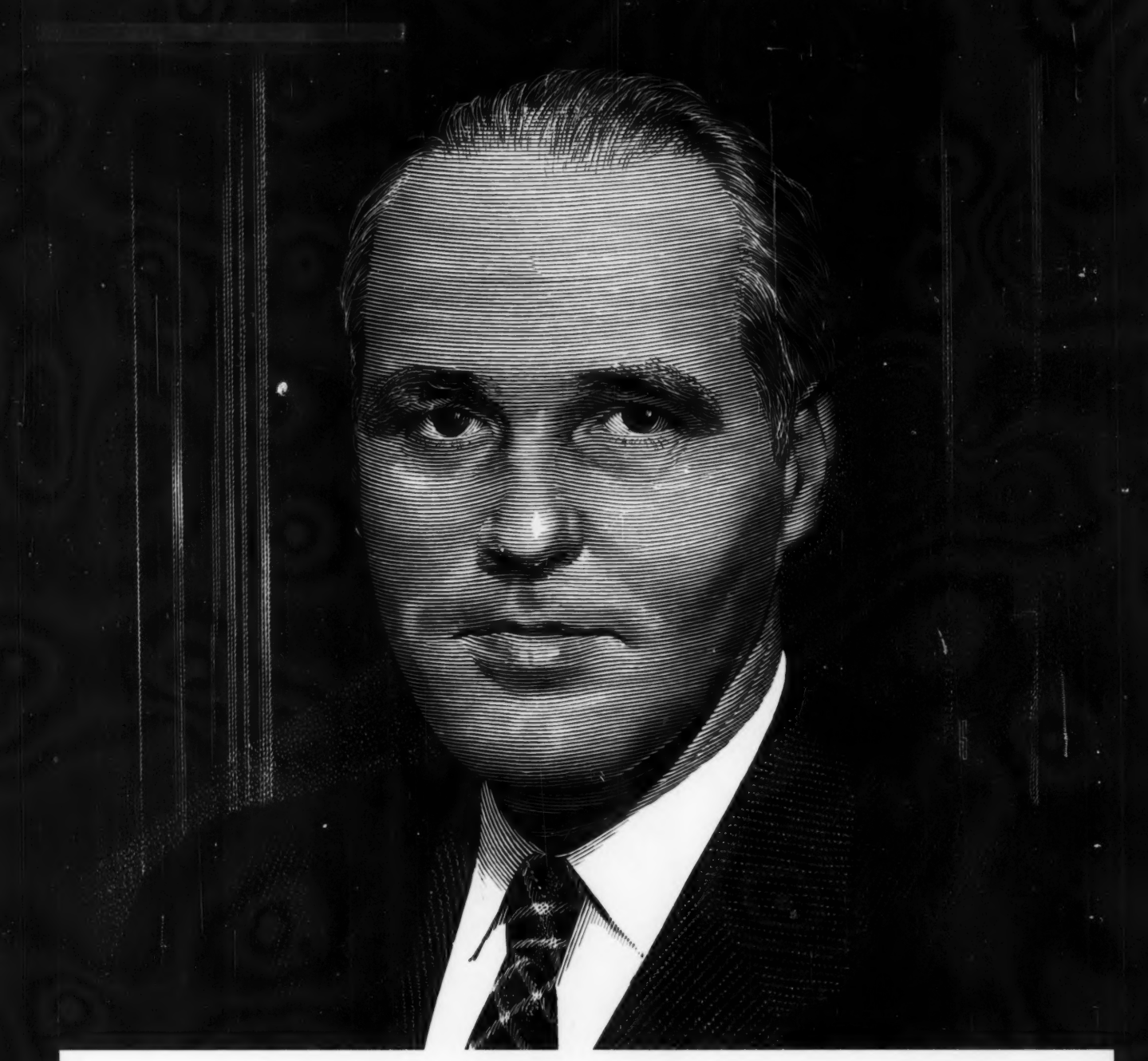
The board of directors of The Electric Storage Battery Co., on June 3, elected Elmer B. Ott chairman, Edward J. Dwyer president, and William P. Cairo secretary. This was the first meeting of the board since the death on

now available!
PANCAKE 2800
OVERFLOOR DUCT

FOR USE WITH
CALL DIRECTOR TELEPHONE
AT AWAY-FROM-WALL LOCATIONS

Bell Telephone companies can now install the new Call Director push button telephone neatly at desks away from walls. Wiremold's new PANCAKE 2800 Overfloor Duct has been designed specifically to hold the 100 (or 75) pair cable required with the Call Director. Overall raceway height is held to the absolute minimum. All steel; easy to install on any floor. Write for full information.

THE WIREMOLD® COMPANY
HARTFORD 10, CONNECTICUT ADams 3-6251



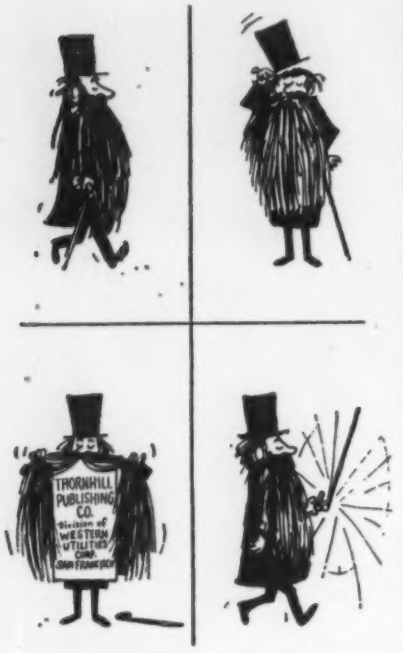
WHY WE BOUGHT COLLINS MICROWAVE

Maritime Telegraph and Telephone Co.
W. A. Logan, Chief Engineer

When the January 1956 sleet storm broke 3,100 of our poles, we found the cost of repairing the open wire lines would be almost as much as installing microwave. After carefully considering costs and system reliability, we chose Collins Microwave and Carrier. We are completely satisfied with the economy, transmission quality and dependability of our Collins system.

COLLINS

COLLINS RADIO COMPANY • DALLAS • CEDAR RAPIDS • BURBANK



A complete telephone directory publishing service

300 MONTGOMERY ST., SAN FRANCISCO, CALIF.
OFFICES: KILGORE, TEXAS • EVERETT, WASHINGTON
BEAVERTON, OREGON

A NEW COMBINED RELAY AND VISUAL INDICATOR

This unique and compact unit does the job of two relays and a light. The relay-indicator unit consists of two wire wound coils that operate and reset a small ball indicator behind a clear glass window. The resistance of the operate and reset windings is 2000 and 1000 ohms respectively. In addition, a set of contacts is an integral part of the unit and may be used for operating any type of low voltage alarm desired. The entire unit is hermetically sealed and requires a single 5/8" mounting hole.

Single Lot
$2.50

Operates on 6-12 Volts D.C.

WRITE FOR QUANTITY PRICES

WRITE FOR LATEST FLYER

TELEPHONE SUPPLY CORP.
421 WEST GARVEY • EL MONTE, CALIF.
CUmberland 3-1658 • Gilbert 4-0341

E. B. OTT

May 19 of Carl F. Norberg, president of the company since December, 1954.

Mr. Ott has been a vice president and director of The Electric Storage Battery Co. and president of Ray-O-Vac Co. both prior to and since it was acquired in November 1957.

He was born in Enid, Okla. and attended the University of Wisconsin School of Engineering.

E. J. DWYER

Mr. Ott's entire career has been spent with the two companies. He joined the Ray-O-Vac organization in 1923, starting on the radio battery line in the Madison, Wis., plant.

He became planning superintendent in 1925 and in 1933 was named assistant secretary. In successive promotions he became secretary, treasurer, senior vice president for administration, and finally president.

He was elected a director of Ray-O-Vac in 1942, serving until 1947; was re-elected to the board in 1952 and served until Ray-O-Vac was acquired by The Electric Storage Battery Co.

Mr. Ott also is a director of Ray-O-Vac (Canada) Ltd., Winnipeg; of Ray-O-Vac International Corp. of Panama; of the Williamsport Battery Co., South Williamsport, Pa.; and of the Jackson (Tenn.) Battery Co.

W. P. CAIRO

Edward J. Dwyer, the newly elected president, joined The Electric Storage Battery Co. in 1941 as resident patent attorney. Seven years later he was elected assistant secretary and appointed head of the legal department, and given responsibility for the stockholder relations program.

He was made secretary of the company in 1954, and in January, 1955 elected to the board. His election as vice president and secretary followed in April, 1956.

Mr. Dwyer was born in South Norwalk, Conn. He graduated from St. John's College, Annapolis, Md.; received a master's degree in mechanical engineering from Johns Hopkins, and the doctor of laws degree from George Washington University.

He is a director and secretary of several subsidiaries and affiliates of ESB.

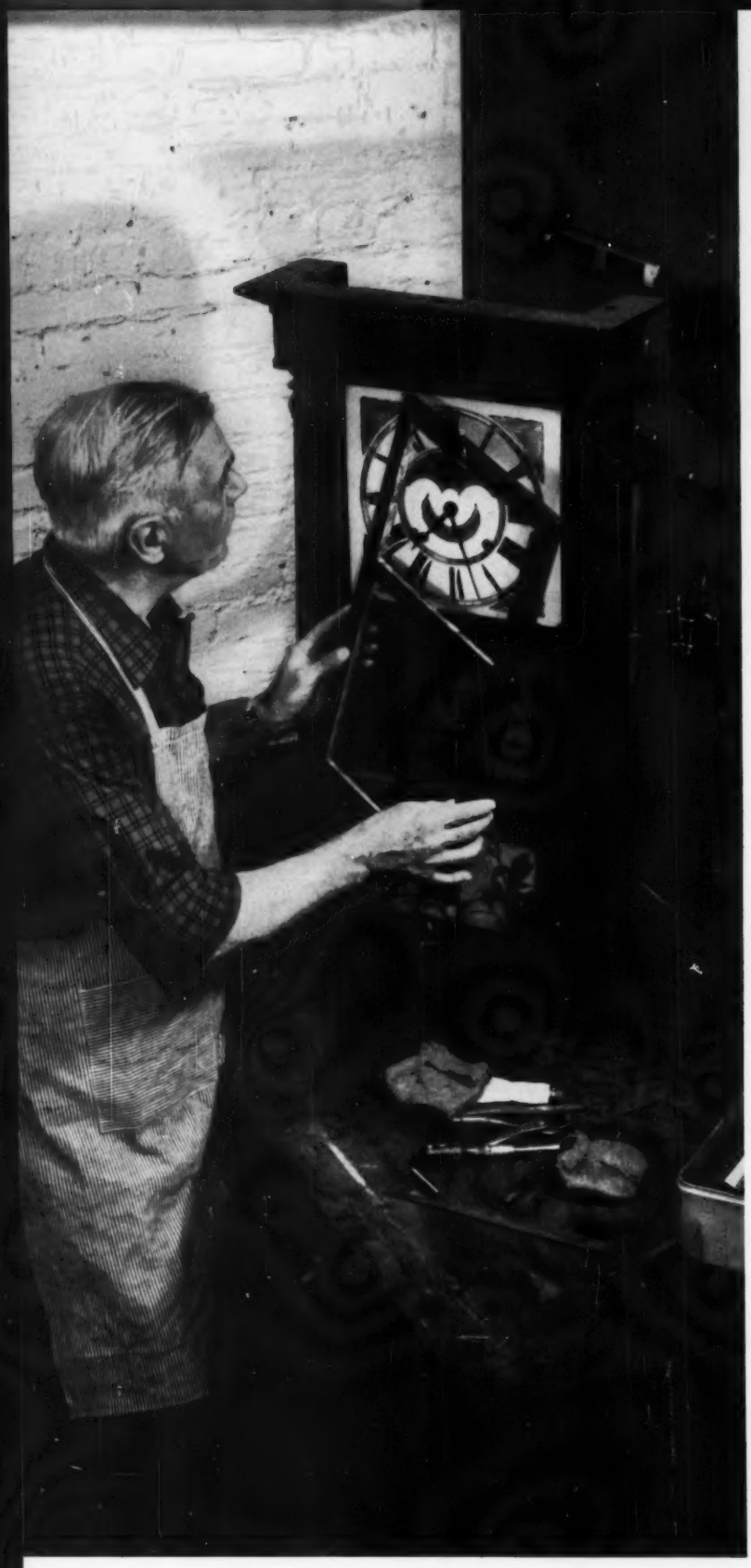
Mr. Cairo has been a lifelong resident of the Germantown-Chestnut Hill area of Philadelphia. He received his bachelor of arts degree from the University of Pennsylvania and later was graduated from Harvard Law School.

He was appointed resident attorney of The Electric Storage Battery Co. in 1942.

He became assistant secretary in May 1957.

Growth Looks Up

"Lift thyself up, look around, and see something higher and brighter than earth, earthworms, and earthly darkness."—RICHTER.



"The right technique *plus* the right tools are what it takes to get the most out of any investment in wood," says a good hobbyist friend of ours.

Many industrial wood users share this viewpoint. It's one of the major reasons they give for consistently specifying AMCRECO pressure-treated products.

Take the preservation method. Service records—some going back over 50 years—show that AMCRECO pressure treatment provides the longest, most dependable wood protection. Added to this is a big plant modernization and expansion program which totals nearly one million dollars... new, improved facilities that help insure fast service to all AMCRECO customers.

Why not consider this unusual combination of experience and equipment before you place that next order?

AMERICAN CREOSOTING CORPORATION

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Special prices for
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Herreid, South Dakota

C&D Batteries Names Platt Co. In Seattle

The Joseph C. Platt Co., headed by Joseph C. Platt Sr., has been appointed the sales and service organization for C&D Batteries in Seattle, Wash. Henry E. Jensen, vice president in charge of marketing for the Conshohocken, Pa., battery firm, announced the appointment.

J. C. PLATT SR.

Mr. Platt opened the Seattle firm 15 years ago after resigning as northwestern district manager of the Hotpoint Co. In serving C&D customers in Oregon, Alaska and western Washington, Platt will be assisted by Joseph C. Platt Jr. and Richard G. Carnahan of Portland.

C&D manufactures industrial storage batteries for the telephone industry; for switchgear control equipment; for powering electric lift trucks; and for railroads, mining, and other industrial applications.

The company also manufactures a companion line of *AutoReg*® Silicon Chargers and AutoCal charger-battery combinations. C&D maintains sales and service offices in principal cities from coast to coast.

Becker Appointed Manager Philco's Eastern Region

The Philco Corp. has announced the appointment of L. G. Becker as eastern regional manager for its government and industrial division. His headquarters will be in Washington, D. C.

Mr. Becker was formerly with the Department of the Air Force as chief, communications-electronics branch, directorate of material programs.

He also served in similar assignments with the Department of the Army in Europe since his discharge from the Army Air Corps in 1946.

L. G. BECKER

During World War II he served in North Africa and Europe.

He is a native of Pottsville, Pa., and attended the University of Pennsylvania and the University of Heidelberg, Germany.

Transmission Engineers Complete School at AE

Twenty-seven members of General Telephone operating companies recently completed a two-week training course, "General Telephone Academic Program For Transmission Engineers," at Automatic Electric Co., Northlake, Ill.

The course—similar in scope to a

INSPECTION SERVICE
"AT TIMBER TREATING PLANTS"
Of poles, crossarms, and preservative treatments. Analysis of wood preservatives. Consultation and specification writing.
A. W. WILLIAMS INSPECTION CO., INC.
MOBILE, ALABAMA
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Inspectors stationed throughout the U.S.A.

FOR ALL OF YOUR CENTRAL OFFICE AND PBX INSTALLATIONS, MODIFICATIONS, AND ENLARGEMENTS, IT'S THE
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MAY WE BE OF SERVICE TO YOU?

Professional Engineers - Contractors
Central Office Installation
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Communication Equipment Installation
Maintenance Modifications — Additions
Buy — Sell — Trade
Any Make — Type
Midwest Communications Service Co.
P.O. Box 3008 Telephone SW 9-4311
Lubbock, Texas

when this happens...

are you fully protected?

photo by Don Pollock

50TH ANNIVERSARY

Reliable

Complete line of station and high voltage protectors

Reliable ELECTRIC COMPANY • FRANKLIN PARK, ILLINOIS

A SYMBOL OF INTEGRITY SINCE 1909

ALPHADUCT UNDERGROUND "B" SERVICE WIRE

ELIMINATES UNSIGHTLY OVERHEAD DROPS

PROVIDES EXTRA PAIR FOR SECOND PHONE

...and no other underground service wire can compare with Alphaduct for sheer ruggedness and trouble free service under unfavorable operating conditions. Alphaduct is engineered to withstand moisture, heat, abrasion, deformation and you get these PLUS FEATURES:

HIGH DIELECTRIC STRENGTH

HEAT STABILIZED POLYETHYLENE INSULATION

MINIMIZED CROSSTALK through control of side to side Capacitance Unbalance

ALUMINUM TAPED for electrical shielding against lightning and interference

CONDUCTORS—annealed copper covered steel for strength

AND IT'S DATED—simplifies your record keeping ...proves Alphaduct's durability

When you buy Alphaduct Underground "B" Service Wire, or any one of Alphaduct's different types of telephone wire—you buy the know-how of the recognized leader in the manufacture of insulated wires for the Independent Telephone Industry.

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ALPHADUCT
WIRE AND CABLE CO.
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CHarter 9-8090

Regional Distributors
Buckeye Telephone & Supply Co.
Columbus, Ohio

The Lindsay Telephone Supply Co.
Cleveland, Ohio

Pankey Supply Co.
Charlottesville, Va.

post-graduate college program—was designed to give the newer operating company personnel the facts and details necessary to carry out present or future assignments as transmission engineers.

J. N. Petrie, Automatic Electric's chief transmission engineer, headed the 10-day program. Charles Hansell, General Telephone Co. of Michigan transmission engineer, served as Petrie's chief assistant.

Completing the specialized training were: Stephen I. McCaron, General of California, and Donald R. Hamilton, General of Indiana.

Also, James L. Somerville, A. W. Anders Jr., F. J. Campa, and R. O. Gaffney, General of Florida.

J. B. Osborne, J. F. Wilk, and Paul E. Miers, General of Ohio.

Also, J. D. Williams, D. G. Williams, B. D. Payne, R. H. Wylie, and J. H. Lee, General of the Southwest.

Richard Miller, Howard Marcil, Harold Miller, Charles D. Hansell, and Robert Smeed, General of Michigan.

T. E. Tingley, General of Illinois; George King, General of Iowa; J. F. Lester, General of the Northwest; Kenneth Boyd, General of Kentucky; E. C. Lynch and W. A. Swanson, General of Pennsylvania.

Also, Francis P. Drake, General of Wisconsin; and B. F. Kelly, General of Upstate New York.

Joseph E. Kopp of General Cable Corp.'s Chicago office has been named assistant vice president, it was announced on June 29. Mr. Kopp advanced to his new responsibility from the post of assistant district manager which he had held since 1953. Mr. Kopp's headquarters location will be: 4820 N. Harlem Ave., Chicago 31, Ill.

NEW, SHORT *Koiled Kords*®

CUT HANDSET LOSSES . . . on Coin Collector Telephones

These new short KOILED KORDS retractile cords allow sufficient length for use in telephone booths but are short enough to prevent the handset from hitting the floor if dropped.

Figure your past losses from broken handsets and you'll see how much these new short KOILED KORDS can save you

These new short KOILED KORDS are available for Automatic Electric, Kellogg, Stromberg-Carlson and Western Electric handsets.

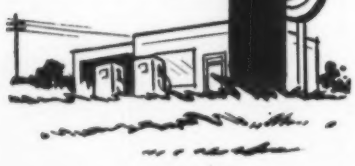
KOILED KORDS, the original retractile cords, are the result of 17 years of research, development and use.

®TM *Koiled Kords* INCORPORATED, BOX K, NEW HAVEN 14, CONN.

KOILED KORDS is a trade mark of KOILED KORDS, INC.

PENTA POLES

PENTA treated top-to-butt for years of added pole-line service resulting in far less per annum costs. Dependable service by a company who has been serving telephone companies for more than 50 years.



PAGE & HILL, inc.

MINNEAPOLIS 3, MINNESOTA

Helpful Literature

MICROFILM BOOKLET—Recordak Corp., subsidiary of Eastman Kodak Co., has just made available a new booklet which simplifies and explains methods for indexing microfilmed records.

Considering that a single roll of microfilm can contain as many as 10,000 letter-size documents, the problem of locating any single document is greatly dependent upon proper indexing of the film.

Maximum retrieval efficiency can only be obtained by proper organization of the material to be microfilmed, the new publication points out. Request HL503.

•

AUTOMATIC TOLL TICKETING—Copies of the April issue of the *General Telephone Technical Journal*, which describe a new advanced version of the "BD" Strowger Automatic Toll Ticketing system, are now available.

The system—designated the Type 59 "Dual-Service" system — offers many new important features, while retaining the essential characteristics and advantages of the present SATT system, the journal states.

Full-automatic number-identification for two-party lines has been simplified so that special SATT (party-identity) dials are no longer required for such lines. The number-identification equipment, coupled with a new detector for automatic number identification, will provide service more economically, permitting greater initial use of this service in marginal situations, it is said.

The Type 59 system has a greater choice of access codes. It can use any one, two, or three-digit code.

Other highlights of the system include automatic answer and call distribution for calls extended to checking operators; multi-frequency pulsing (on an optional basis) for calls extended to and via common-control-type switching centers; and a computer which has been expanded to provide automatic rating when six-digit analysis of the called number is required. Request HL504.

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TRUCK DRIVERS' MANUAL — The latest edition of the White Driver's Manual for truck owners, fleet superintendents, and drivers has been issued by The White Motor Co.

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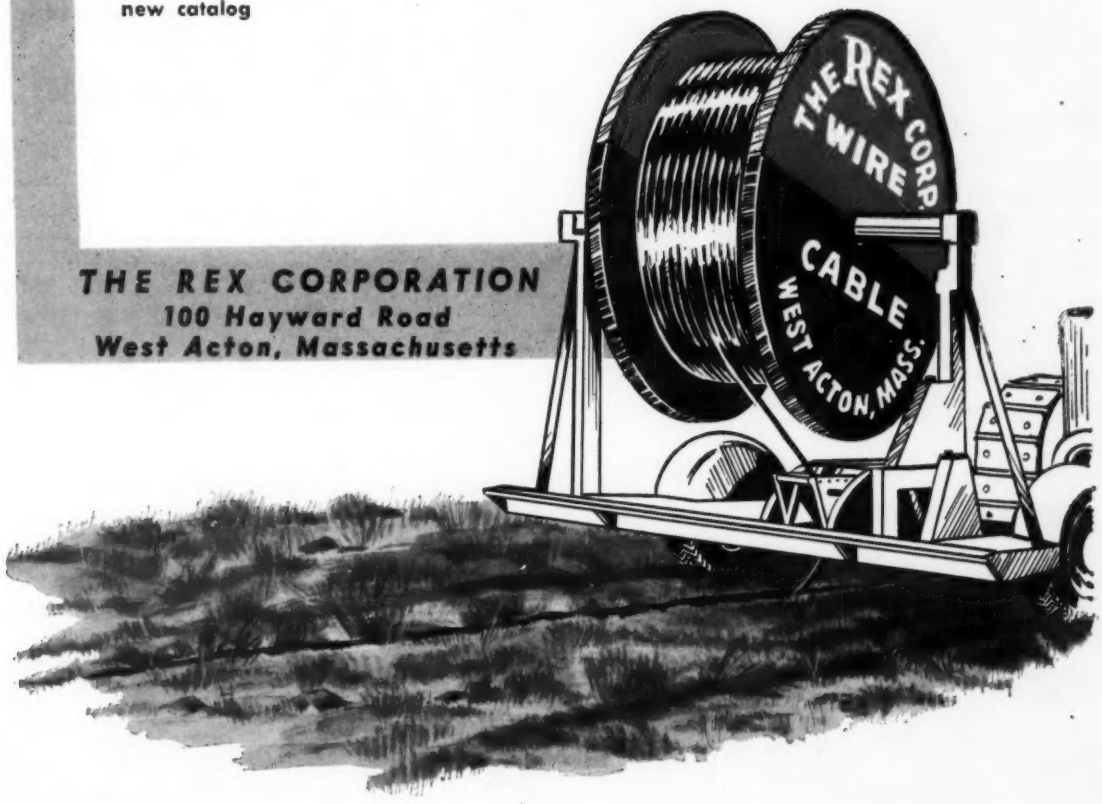

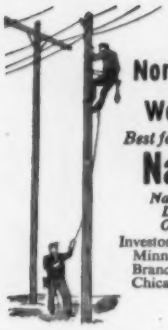

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